

AUGUST, 1913

ELECTRICAL-MERCHANDISE AND SELLING ELECTRICITY

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The Signs of Big Business
are **FEDERAL** signs

Federal Sign System (Electric)

NEW YORK 229-231 West 42^d St. CHICAGO Lake & Desplaines Sts. SAN FRANCISCO 267-269 Eighth St.



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Retails at \$8.00.

Makes the same splendid coffee as the more expensive Westinghouse Percolators.

Graceful in design and well finished.

Simple in construction—nothing to get out of order.

Everybody wants electrically percolated coffee now.

Here is a splendid electric percolator at a price that will appeal to that large class who have been saying—"Yes—but a first-class percolator costs too much."

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Feature this percolator in your window displays and newspaper advertisements.

Ask for window cards, newspaper copy, and cuts.

Westinghouse Electric & Mfg. Co.

East Pittsburgh, Pa.

Offices in 45 American Cities



ELECTRICAL-MERCHANDISE. —SELLING ELECTRICITY—

VOLUME XII AUGUST, 1913 NUMBER 8

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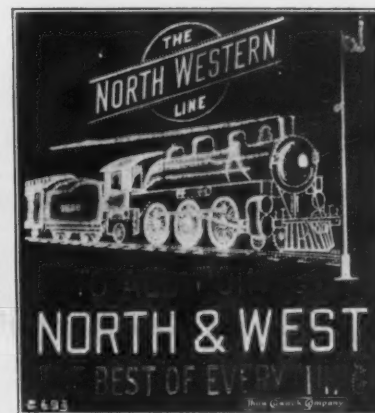
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Day and Night views of the famous C. & N. W. Ry. sign, size 50 ft. wide by 55 ft. high, containing 4,414 lamps. Designed, made, erected and installed by us.



MR. CENTRAL STATION MANAGER

THIS IS THE MESSAGE YOU HAVE BEEN WAITING FOR

The Thos. Cusack Co. is now ready to co-operate with you in the selling of Electric Signs in your city. Attractive value - That for Originality, Attractiveness and Durability, the Best value ever offered.

OUR CO-OPERATIVE SELLING PLAN WILL INTEREST YOU—IT MEANS REVENUE FOR YOUR COMPANY AND, ABOVE ALL, PLEASED CUSTOMERS.

WE HAVE PREPARED SOME INTERESTING DATA FOR YOU. IT HAS BEEN MAILED. IF YOU HAVEN'T RECEIVED YOURS DROP US A LINE.

THE WASHINGTON
SHIRT CO.

ELECTRICAL DEPARTMENT

Thos. Cusack Company

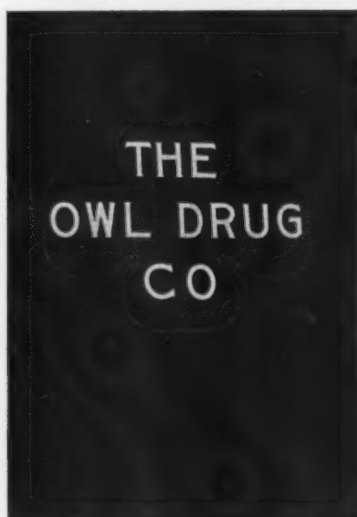
CHICAGO, ILL.

A Sign of *Individuality*



Begets More Signs

This "Movie" sign was created for its building location and opportunity; a beautiful display achieved with red, amber, canary and opal lamps. Since it appeared in San Diego—two months ago—three other theatres have come to us and ordered spectacular displays.



The Owl Drug Company operates twenty-seven drug stores on the Pacific Coast. We recently built them this clover leaf sign and have already reproduced it several times for their other Stores. The clover leaf flashes—the name burns steady.



The Casa Verdugo sign marks a famous Spanish restaurant in Los Angeles. It is built in metal relief, verde antique, alive with a Spanish tang. It is a beautiful creation, already a landmark.

Such signs beget more signs. They raise the standard of electric advertising. They swell the sign load. Every sign we build is studied for its opportunity. Our nearest factory is ready to serve you with this Greenwood

Individuality

Two Factories

Two Factories

GREENWOOD ADVERTISING COMPANY
GREENWOOD ADVERTISING COMPANY (WESTERN)

KNOXVILLE, TENN.

LOS ANGELES, CALIF.

ELECTRICAL MERCHANDISE AND SELLING ELECTRICITY

Edited by FRANK B. RAE, Jr.

EARL E. WHITEHORNE, Managing Editor

The Paying Side of Industrial Lighting

The Profitableness of the Lighting Load, Itself, and How It Influences the Development of Small-Power Business

By W. E. BAYARD



LAMP salesman told me this story, and as he gave dates and named names, it is probably true. It seems that a manufacturing concern in the Middle West doubled the size of its plant, and in the turn-over

the local lighting company succeeded in throwing out the generating machinery that had operated in the old factory, substituting central station service. Immediately thereafter the incandescent lamp man came round to secure the lighting equipment order. Imagine his amazement when the factory owners stated that the central station had recommended gas lighting.

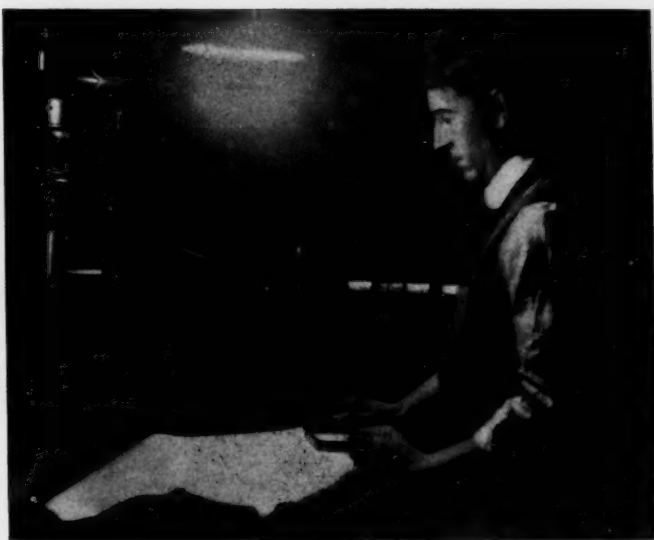
Being something of a fighter, he wired for his engineers and demanded a joint hearing with the central station representatives. He was there to prove that electric lighting could be accomplished more cheaply, value considered, than gas lighting, and he had opposed to him the very men who would

most profit by his victory. When the smoke cleared, he had won an order amounting to the installation and equipment of thousands of outlets: the central station was forced grudgingly to admit that at the rate they were satisfied to make, the factory could be supplied electrically with better light at cheaper price!

While this incident is probably not often duplicated, it is safe to say that the average central station knows very little more about industrial lighting than the one that fought against my friend, the lamp man. And because they know very little about it, the average central station "passes it up" as business unworthy of consideration. This is a mistake. It is my belief, founded on quite a bit of experience with industrial lighting for large isolated plants, that this class of business not only can be made a source of considerable net revenue in itself, but can be used as a wedge to get a great deal of very profitable small power business which now operates by gas or gasoline.

Let us look the facts in the face. There are, in every city worthy of the name, a large number of small establishments using power in limited quantity. As a rule, these businesses are "one man" concerns started with limited capital by men of small ideas and narrow vision. To such men the immediate dime is more than the future dollar. To such men, the arguments of the gas engine men appeal, for when you eliminate all costs except fuel and oil, there is no doubt about the apparent economy of the small engine to the man who can "run it himself."

This leaves only the lighting of these small plants to the central station, and this lighting is short-hour, peak-load business that takes (and deserves) a high rate. Further, the lighting so supplied is unsatisfactory. Go into forty small shops, and in thirty-nine you will find carbon lamps on drop cords hanging where the workmen must continually move them about to get any sort of illumination. In thirty-five of these plants there will be no reflectors used so that



An example of good and bad placement of lights. In the left-hand picture, the workman suffers serious eye-strain due to the glare. In the right-hand picture, a slightly different type of reflector installed a few inches lower protects the eyes, so that the operative works in comfort. This slight correction of lighting reduced the spoilage in a large shoe factory by almost 30 per cent.

every operative suffers, consciously or unconsciously, from the glare of the bare filaments. In all of them the lamps are dirty and probably dim with age.

Now it doesn't appear very profitable to spend time on this class of customer, and nobody can blame the central station salesman for overlooking it: at the same time, the opportunity for profit is there, and the opportunity to sow seed which, on the average, will yield very considerable future profits.

For it must never be forgotten that the central station is selling service—not kilowatt-hours or lamp-hours or horse-power hours, but service. And the opportunity of the small industrial plant is a service opportunity.

Suppose, for example, a small plant equipped with twenty carbon lamps. This gives us a load of 1,000 watts. The lamps burn, as a rule, 250 hours per year, making an annual gross of only 250 kwh. Now, it has been proven time and again that modern industrial lighting equipment and mazda lamps will displace carbon lamps installed on the any-old-way-system with a saving of about one-half. The opportunity then is to cut the customer's bill squarely in two. You lose 10 kwh. of load monthly but the customer saves a big round dollar. Will that win his confidence?

tion on power? After you have shown him how to economize on light and how to employ proper lighting as an efficiency factor in his production, is he going to refuse to

lighting is not such a hard problem to the central station salesman who knows his business and who can keep his eyes open and his mouth shut.



Mazda units hung fairly high and properly distributed enabled the workmen gilding piano frames to increase their production by over 10 per cent and made it practically unnecessary to "touch up" bare spots in the inspection room. The improved lighting in this case was a source of immediate revenue to the manufacturer.



Another example of good and bad lighting. Under the bare lamp, the workman continually suffers from the glare of the bare filament; with a proper reflector the light shines on the work, not in the eye. Note the difference in the illumination on the lathe.



"But," says a man on the back seat, "How about this cutting the revenue in two?"

In nineteen cases out of twenty, you make money doing it. For this sort of lighting is unprofitable and the less of it you have, the better. The current can be sold elsewhere on a better basis—longer hours on higher rate or both.

And if the change is made intelligently, three or four things will be accomplished for your small manufacturer besides the mere reduction of the monthly bill. Better lighting will mean higher efficiency on the part of his workman: it will mean less spoilage and fewer "seconds;" it will mean that in an emergency he can work his operatives for longer hours of overtime without their becoming overworked, for it is a fact that the real strain of over-time work is eye-strain and not physical strain.

The effects of this change will be that the small factory man learns by practical demonstration two things:—

a. That the central station is honest in its desire to give him the greatest value for his money; and,

b. That the central station knows its business—the business of solving light and power problems.

Does it not seem logical that this man with such a demonstration as a basis, is in the right frame of mind to consider a proposi-

tion give a hearing to your arguments on the economy and efficiency of electric drive? Not often.

The practical application of industrial

The hardest part of the job lies in overcoming the prejudice of operatives. To the ignorant, a bright light is a good light; a 32-cp. lamp is just twice as desirable as a 16-cp. lamp. Conversely, ten foot-candles of illumination on a working surface is less appreciated than five foot-candles shining in the eyes. To explain the difference, to demonstrate the superiority of illumination as against mere light, is a matter of tact and patience. The operative must be "jollied" or bribed to meet you half way and give the new system a fair trial. As soon as the novelty wears off his own eyes will be your best argument; it will be harder to make him give up the new system than it was to make him give up the old.

The factors in good industrial lighting are two—absence of glare and proper distribution of light.

Glare is simply a matter of keeping the direct light from the lamps out of the worker's eyes, and of avoiding direct reflection. The first is accomplished generally by careful selection of reflectors: the latter



"Daylight" illumination in a typewriter assembly room. In this case glass reflectors are most satisfactory because there is no dirt from bells. The operatives here PREFER to work by artificial light.

by proper placement of units with relation to the working surfaces. It must be kept in mind always that accidents, spoilage, and after-dark laziness and time-wasting are caused almost always by eyes which are semi-paralyzed by glare. The delicate mechanism of the eye—which is practically as delicate in a bull-necked laborer as in a weak child—automatically balks at overstrain. The brain can drive these rebellious nerves to continue their work, but no power can force them to do this work accurately or continuously until the cause of the irritation is removed.

As to the proper distribution of light, this is a matter of close observation of the working conditions in each plant. The lights must be so arranged that objectionable shadows, either from machinery or from the workman himself, are eliminated. In this connection, the words of a famous industrial lighting expert tell the whole story. "Light is a tool," he says, "and like any other tool it should be exactly suited to the work in hand."

The day is past when sensible factory superintendents put a tall man and a short man to work at the same height of bench. Similarly, we should not expect every man to work under the same lighting conditions but should adapt the conditions to the individual with the single purpose of developing efficiency and giving the employer the maximum quantity of the best quality of work.

Simple?—in theory, yes; but in practice it means patience. The question is, is the result worth the labor involved? My answer is, yes—without question.

The trouble is that too many central stations—not all, but too many—look at this sort of lighting load as a necessary evil instead of looking at it as an opportunity. They have, in a way, the same narrow vision as the small manufacturers with whom they are dealing—they forget the future in a pessimistic view of the present. This pessimism is unwarranted. The majority of the one-man concerns are hopeless prospects, of course, but out of the average there will be found probably one in ten which will richly repay the time and trouble of rendering real service, and five in ten which can be raised from insignificant consumers of peak-load current to modest users of central station power.



The illumination of docks, freight sheds and similar space is seldom given much consideration, yet these "before and after" pictures show the obvious advantages of good lighting even for the roughest sort of labor. Incidentally, in economy the good light is over 33 per cent cheaper than the poor light.

Industrial Lighting Arguments

Symposium of Expert Opinions That Cover All Phases of the Subject



THE following symposium of arguments regarding the benefits derivable from a proper system of industrial illumination was carefully gleaned from many authoritative sources. The illuminating engineer, the light and reflector manufacturers, the advertising man, the electric editor, the mill owner—the many experts who have a com-

prehensive grasp of the problems of industrial lighting, here treat the subject from every possible angle. The various arguments are arranged and classified, as nearly as possible, into well defined groups, although, of course, the whole matter is too closely interwoven to permit of any very sharp differentiation.

For example, the efficiency of an industrial system and the efficiency of the help that work under it are practically identical. Furthermore, the system of lighting that raises the efficiency of the mill hand also enables him to see his work better than under old conditions, with less strain on his eyes, brain and nervous system; with a consequent better control of accidents and of faults in the fabric as it moves progressively from the raw material to the finished piece. The output is better, both in quantity and quality, while, at the same time, the cost of production is kept low. Finally, the hands are made better contented by a system of artificial light that means so much to their working efficiency, earning capacity and physical well being.

While looking through the various arguments, the central station man should keep this close interrelationship closely in mind, while, at the same time, he will also discover certain advantages in the method of classification we have adopted here. He should also recognize that, although industrial lighting is not in itself profitable business for him, it is his vital concern to see that mills and factories under his jurisdiction are properly lighted. For one big difference



This workroom is characteristic of thousands of small clothing and dress establishments all over the country. Sweatshop methods are being done away with and the manufacturers are learning that good light reduces spoilage—an important factor in all piece-work shops where the operatives' chief thought is for speed.

between good and poor industrial illumination is light gone to waste, that is to say, current unnecessarily consumed. The central station that shows the mill the right way therefore saves unto itself just so much peak-load current that could be utilized more profitably elsewhere. Again, the mill owner would come quickly to see that the central station had been of real service to him, would have increased respect for the latter's methods of doing business, and doubtless would bend a more ready ear to the central station man's arguments relative to the more profitable theme of power installation.

The Effect of Good Lighting on Production

"Seventy-five per cent of the faults and errors in a mill are made at night, and come from poor illumination. At the end of a long day the workmen are tired, and it is then that they need good light to work by more than at any other time. Proper mill or factory lighting means maximum output with minimum of faults in the finished product."

"Improvement in quality of the goods is expected from good lighting. Summer-made cotton goods used to demand higher prices than winter goods, their quality being superior because of the better lighting conditions under which they were made. With adequate illumination the output should be maintained at the standard quality throughout the year. To accomplish this, an even light of sufficient intensity should be thrown upon the various machine parts, where constant vigilance will detect flaws at the earliest possible moment. Anything such as broken threads, floats, etc., must be detected surely and quickly. Perhaps the largest amount of study has been given to the problem of distributing the light upon looms so that the proper amount will be obtained at the heddles, harnesses and breast beam. The design of the lighting should of course be such as to eliminate trouble from shadows caused by the operator being in his own light."

"Good illumination makes for uniform quantity and uniform quality of output in good weather or bad."

"Lots of mill men think that as spring comes on and the daylight lengthens, the necessity for good artificial light decreases. It does where the sunshine can reach, but how about the dark corners? Good electric light is cheaper at any hour than waste, spoilage, and the slow speed and inefficiency

that always come from the operative with strained eyes and a headache."

"The personal equation is a big factor in the textile industry. From the carding room to the final inspection, careful and

mill. The elimination of defects as the material passes step by step through the preparatory stages, has not alone a beneficial effect on the quantity of work done, but delivers to the loom a much better grade of stock. It is very desirable therefore that



A large textile mill electrically illuminated. Hundreds of the largest textile mills in the country have been equipped for incandescent electric lighting within the past three years.

constant scrutiny on the workman's part is the price of a successful product. Because correct illumination not only permits but induces greater vigilance during those working hours when eye-fatigue and carelessness are to be expected, it has therefore a very pertinent bearing on both the quality of the output and the economy of its manufacture. At the loom, where all defects in winding, warping, quilling, twisting, etc., come to the surface and must be rectified, efficient illumination is obviously of the utmost importance, yet inadequate loom lighting is the rule rather than the exception."

"The specific return on the outlay for well designed lighting system, is many times the original investment reckoned in dollars and cents for increased and improved production."

"The weaver depends on this illumination in his continued watch for floats, tight knots, drawbacks, broken ends and all other defects that depreciate the value and quality of the finished cloth—his vigilant eye must scan without rest the five to twelve thousand threads passing through the harnesses. Adequate illumination must secure the detection of many flaws that would otherwise escape observation."

"What applies to the looms, applies in a greater or less degree to all machines in the

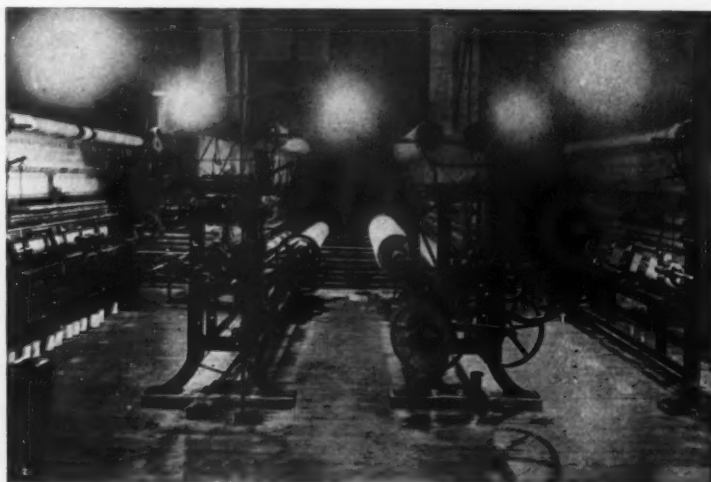
the principles of correct illumination be understood by the managements of textile establishments and those who are responsible for the amount and character of the product."

"The average textile mill operates by artificial light about 500 hours each year. Under the conditions which ordinarily prevail, the amount of work turned out under artificial light is between 12 per cent and 20 per cent less than is produced under daylight. These two facts—and they are facts, for they have been proven by a long series of tests in various industries—contain material for very serious study upon the part of both mill owners and superintendents. They mean that the after-dark work cuts off 2 per cent of the mill's output. They mean that the mill, in effect, runs from six to ten whole days every year without producing a single yard of cloth. They mean, that if the fault is corrected, any mill can get 102½ yards of cloth next year for every 100 yards it produces this year, without the addition of a penny to the investment charge, overhead expenses, or depreciation."

"Reducing the lost time to hours, it is between 60 and 100 hours per year operative in the weaving industry. If you have 1,000 looms, that means 60,000 to 100,000 loom-hours wasted annually—in other words, that you are actually wearing out from 20 to 33½ looms a year without the production of an inch of cloth."

"To equip a mill so that the lighting shall be an aid instead of a hindrance is simple—to the man with the know-how. Good light consists in getting a reasonable intensity of illumination, no glare, an absence of shadows, and as near as possible to daylight color value. These items are so uniformly apparent that it would be difficult to say which should be named first. The absence of any might well make the whole a failure."

"The eye is equipped with a very delicate member that closely resembles the shutter of a camera. This member is known as the iris and its purpose is to regulate the amount of light that is admitted into the eye. Now, if we will examine these streaks in our reflection, we will find that there are light and dark spots. Imagine, then, for example, a condition existing where there is the least



Machine shop in which the artificial illumination is better than daylight. The deep reflectors practically eliminate glare effect while the spacing eliminates all black shadows.

vibration. The result is that back and forth over our work we have these striations continually moving. The eye must follow and adjust itself as each light and each dark spot passes in front of it. It is possible for this to continue for perhaps an hour, but eventually it is unable to keep up and the result is that the eye is severely strained. Long continued, this results in permanent injury. The eye cannot see as well as it did at first, consequently defects in material are allowed to pass unnoticed, and we look at our spoilage and wonder why the amount is greater during the seasons of lighting than it is at other times. If this one point were investigated it would be found that poor reflectors were responsible for at least one-quarter of the spoilage. Good light means good work, and the man who tries to economize at the expense of his operatives' eyes, finds that it is a very unsatisfactory method."

"A recent report of census experts gave one per cent as the gross spoilage in American manufactures in one year, an item of approximately \$150,000,000. Of this great amount, 75 per cent is said to have occurred under artificial light, and the experts seem to agree that 25 per cent, or \$28,125,000 of this could have been avoided by good illumination."

"Particularly good illumination is required in factories employing the piece work system, since nearly all factories employing this system, require close inspection to maintain the quality of their goods."

"Faulty goods or 'seconds' frequently must be sold at or below the bare cost of manufacture, and as poor lighting in a mill results in a larger quantity of 'seconds' this is only another evidence of the importance of adequate industrial illumination."

"Let any textile man go over his rejected material and inquire just how the trouble occurs, we venture to say that at least 25 per cent could be saved by proper lighting. That statement is based on the evidence of half a dozen practical mill men. Approximately the same percentage holds true in the shoe, machinery and allied manufacturing industries. You may not have realized it; the workmen may not even suspect it. But if you will just put proper lighting equipment on machines and keep a comparative record of those machines against others, you will know exactly what poor

lighting is costing you in spoilage. Such an experiment costs almost nothing; it may save many hundreds of dollars."

The Effect of Good Lighting on Cost of Production

"Three of the principal items in the cost of manufacture are the fixed costs of operation, labor and material. The artificial illumination of textile plants which permits

depends upon the other, and an increase in the efficiency of the man increases the efficiency of the combination, the result being that the man and his machine produce a corresponding larger and better output of the finished material, producing, therefore, a greater return on the money invested in the man's wages and the cost of the machine. In this regard, the type of lighting that will enable the man to get the best out of his machine forms an important cost factor."



Weave shop of a large textile mill. Scientific illumination in this case enables the weaver to follow the thousands of tiny threads and to detect the slightest imperfection as it occurs.

their efficient operation at all times has an important effect on these items. Regarding the first, when a plant is enabled to operate on a day and night schedule instead of a day schedule, the fixed cost of operation and maintenance, such as interest on the investment, taxes, depreciation, charges, and all other overhead expenses, is distributed over approximately twice the output. The result is that the fixed cost, per 1,000 yards of cloth, is lower than if a more limited amount of time were allowed for production. Therefore, anything that will assist the working conditions during the dark hours will materially lessen the cost of dark hour output. Nothing could have a more beneficial effect upon these conditions than a system of lighting that will furnish sufficient and well diffused illumination, and is at the same time thoroughly reliable."

"A man and a machine act as a combination. Each element of this combination

"Good illumination helps to lessen the pro rata cost of production by checking time wasted by operatives in moving lamps from one point to another, and in stopping machines to correct faults."

"An item of cost generally overlooked, but which must be taken into consideration, is the investment made in imparting experience to operatives. Insufficient and improper illumination has a detrimental effect upon their eyesight and general welfare, and consequently incapacitates them at a time when they should give the biggest returns in the way of service because of their long training."

"Let us consider the effect of good illumination on the investment made in the matter of wages. Assuming that an operative is worth 30 cents an hour under poor illumination and that by increasing the illumination to a satisfactory point he is worth 35 cents, it will undoubtedly be profitable to make a change, since the cost per hour of the improved illumination would be only a small per cent of the five cents increase in the operative's worth. Illuminating engineers have made investigations along the above lines and the results so far obtained show that the figures cited are conservative."

"The materials form a considerable part of the cost of any manufacturer's product. Frequently the material is partially or wholly destroyed, or rendered of less value by improper manipulation in the factory due to poor illumination. Under poorly lighted conditions, it is absolutely impossible to detect defective goods and they eventually reach the market where they cause the loss of thousands of dollars worth of business, and also lessen the prestige of the manufacturer. This is especially true of piece work. The operative through eagerness to increase his income, will take advantage of the poor light to cover up poor work. Even if such goods are detected before shipment it is necessary to put them on the



The artificial window scheme of illumination. Cooper-Hewitt lamps installed directly above window give practically the same illumination effect as daylight.

market as second class, thus entailing a certain amount of loss. Good illumination, by reducing the possibility of such faults, will effect a very considerable economy in the production."

Proper Lighting Makes for Efficiency

"The proper combination of reflectors and high efficiency lamps acts as a stimulant to faster and better work. Before the lights are turned on, the mill is comparatively dark and the operatives have become accustomed to a low intensity of illumination. The change from dim light to a flood of perfect illumination that does not strain or tire the eyes has much the effect of a short nap in refreshing the worker. It instantly relieves the strain caused by the previous dim lighting without substituting a different and more injurious strain, such as is occasioned by the ordinary equipment."



Another textile installation. This is an example of group lighting in which the lamps are hung with relation to the machines, so that the operative in moving about cannot cause a shadow on the work.

"A skilled workman's value as a producer is dependent on the tools which he uses, and good light is one tool he cannot dispense with. Since the light is provided primarily for his use, that he may perform his work with maximum efficiency, it follows that it should be suited to his needs."

"By making him thoroughly comfortable, and at ease with his surroundings, a man's productive efficiency is doubly increased—the physiological and psychological effects of a cheerful, well lighted space, as compared with a gloomy, dimly lighted room, cannot be questioned for an instant. The necessity, then, for a good general illumination in shops even though of relatively low intensity, is at once apparent."

"Just as machinery must be well oiled and true, and geared to the best working speed, so must the employee be provided with proper light or the plant efficiency will suffer, and proper light means 'light on the object and not in the eye.' For when a man works with a bright light shining in his eyes, the inevitable daily result is eye-strain, headache and brain fog, which means inaccuracy, slow speed and a spirit of unrest; and the effect can be reckoned in decreased output, increased spoilage and greater wear and tear on machinery through lack of care."

"Careful analysis of conditions in a number of mills and shops where good lighting has been installed, show that the average increase in efficiency as measured by the output of machines and men, is between one and three per cent. Thus, a plant having a payroll of \$1,000 per week will effect a saving of from \$500 to \$1,500 annually, measured either in less wages or more and better work."

"There's a difference between light and illumination, just as there is between a solid stream of water and a spray, or as there is between good and bad oils. Illumination means light on the object and not in the eye. It means an absence of the glare that wearies the brain, a concentrated illumination on the work itself, so that it becomes actually the easiest thing for the eyes to watch. The man who does the best work is the man sound in mind and body. Where there is effort to see distinctly, there is eye strain. Eye strain

machine requiring attention. If the shuttles are not charged automatically, there should be enough light on the shuttle boxes to enable the operator to ascertain at a glance how much thread remains in the shuttle. Furthermore, daylight conditions should be simulated at night in that the entire room should be brightly lighted so as to have a cheerful appearance and give the idea of wideawakeness. This is also essential for adequate supervision."

"With the progress and improvement that is being made in the humanitarian features in factories, the mill owners will soon be required to give proper attention to adequate lighting. If bad lighting conditions are allowed to continue without efforts being made to alter conditions, we should not be surprised to see legislation enacted to control the matter."

"Uncovered, glaring light sources have no place in factories. Apart from the direct injury done to the eyesight, there is the discomfort which sometimes shows itself in aversion to normal work or the sense of tiredness in the operator himself, which may or may not be recognized as due to eyestrain. This must show itself, however, in both the quality and the quantity of the work."

"One of the big casualty insurance companies gave out some figures a while ago, showing how many more accidents occurred during the winter months than in the seasons when daylight lasts through the working day. These figures covered some 800 mills and a record of three years, and the totals are staggering. It shows what mills and factories are risking and losing by the use of poor light, for these accidents to life and limb mean lawsuits and damages."

"The specific return on the outlay for well designed lighting systems is many times the original investment reckoned in dollars and cents for increased and improved production, without considering the supplemental, if less tangible, value of better working conditions."

"Quantity of illumination must not be confused with quantity of light when applied to the problem of mill lighting. The illumination is provided solely to produce the highest class of product with the least waste—that is, it is provided to see by. A small lighting unit properly placed and having a suitable reflector, will give far more effective illumination than a bare lamp of twice the candle power, which throws its light indiscriminately to the surrounding space and into the eyes of the operative, but only incidentally lighting the work. The center of the most brilliantly-lighted ball room would not have sufficient illumination to operate satisfactorily the general run of textile machines, for it is concentration of the illumination on the work that is needed."

"A most surprising thing is the apparent disregard of artificial lighting and the crude methods in existence in some of the big mills. It would surprise a good many people were they to know that some fifty large mills are using gas for illumination in New England alone. Were we to stop and consider that, with the improvements recently made in the electrical field, they could not only secure a much better light but could increase their efficiency 50 per cent, at a saving of about 25 per cent in dollars and cents over gas, it will be difficult to understand why the illumination of yesterday is in existence. There

and the headache that follows are dead weights on vitality, and a brake on efficiency and output."

"Poor light is responsible for a great deal of wasted time, for any employee, no matter how quick, cannot work at his normal speed by a light that makes him uncertain as to what he is doing. He frequently has to go close to a window or light when he wants to get an exact measurement, which means more lost time, for which the employer has to pay."

Miscellaneous

"I can't afford to pay for new lighting equipment," said a mill man to an industrial lighting expert.

"No," said the latter, "but do you know how much you are paying for darkness? As a matter of fact—fact which I can prove—the average mill annually pays more for inefficient and insufficient light than it would have to pay for gold-plated lighting equipment."

"A good system should bring up the output during the hours when artificial light is used to about the value obtained with daylight. On the work itself, the light should be ample as far as concerns the parts of the

are, however, mills which monthly sacrifice thousands of dollars through sheer waste of illumination. It is a safe estimate that some \$20,000,000 worth of illumination is wasted yearly in the United States alone. Not as we might suppose by neglecting to extinguish the lights that are not in use or in other ways, but rather by the failure to control illumination."

"Illumination and light are two distinct and separate things. For instance, a room may be well lighted yet poorly illuminated. Light is the cause, illumination the effect, and unless we control our illumination we are virtually throwing money away."

"We have taken the evils of industrial lighting too much for granted; now let us do a little analyzing. In the first place, it is peak-load business which must be accepted at rates that are unprofitable. Every twenty incandescents, every pair of arcs, represent a kilowatt of station and line capacity tied up for an insignificant eighty minutes or less daily use. Obviously the thing to do is to reduce this demand and release this equipment. We may have no immediate profitable market for the current, but that is immaterial—the market can be found or made. To reduce the industrial lighting load is not difficult, consisting only of applying the familiar principles of illuminating engineering to purely utilitarian installations. High efficiency lamps and properly chosen reflectors solve the problem."

"The first form of waste common to practically all industrial lighting installations is in the lamps themselves. In too many shops and mills, lamps are bought with reference only to their life. The mill owner must realize that the illuminating efficiency of the light, not life and price, is the final factor in determining lamp value."

"Although light-colored walls reflect the rays of light back into the room where they are needed, and efficient lamps give a large amount of light for a given expenditure of electrical energy, these two important factors, by themselves, will not give the best results unless they are backed up by scientifically designed reflectors, which will catch the rays that start for the ceiling and other undesirable destinations, directing them down to the level of the work, at the same time shading and protecting the eyes of the employees from the glare of the light source."

"The Manufacturers' Association states that in the United States alone 500,000 avoidable accidents have occurred in one year, and it is maintained by the authorities who have made a study of safeguards for the benefit of employees that 25 per cent of these accidents were caused by poor illumination."

"Operatives forced to work in poorly lighted factories have that same feeling of oppression that is felt out of doors on a dark day, or in a factory that is not supplied with heat. A mill man can cut off the heat from his operating rooms and thus decrease operating expenses. He would not do so, however, owing to the fact that his operators would be unable to work on account of cold fingers and the general depression that would prevail. It is just as reasonable to apply good illumination to tired eyes as sufficient heat to cold fingers. Besides the effect on the efficiency of employees may also be added its influence in retaining them. An instance of this was that of a southern cotton mill which installed mazda lamps, and as a result was flooded with applications

from the best operators in the district. The effect was so great that other mills in that section were forced to install mazda lamps in order to keep their employees. If mill men would forearm themselves against labor disturbances and discontent they will make their factories congenial by good illumination."

What the Manufacturers, Themselves, Say

The question was asked of 164 manufacturers, What benefit had they derived from improved lighting in their mills or factories? 28 per cent said their lighting costs were reduced.

19 per cent said their output was increased.

37 per cent said their operatives were better satisfied.

64 per cent said that, even disregarding figures, they were satisfied that the change was worth its cost.

Less than 5 per cent said that they traced no direct benefit.

From this it will be seen that, while 8 out of 164 considered the improvement in lighting to be a valueless investment, of the other 156 each found an average of two good business reasons for congratulating themselves upon making the change.

Bibliography

List of Technical and Commercial Books and Articles on Industrial Lighting Published Within Year

We submit, below, a list of books and articles on various phases of industrial lighting, both technical and commercial, which have been published within the past year. This list has been contributed by several authorities on the subject, and although it is necessarily incomplete, sufficiently covers the field to suggest a profitable course of reading to central station men who recognize the growing importance of industrial lighting and who therefore wish to inform themselves as completely as possible on its many-sided aspects.

You should select from this list the article or articles that would seem most directly to apply to the industrial lighting opportunity in your town, send for them and read them. In particular, you should seek out the publication issued last year by the Commercial Section of the National Electric Light Association, which is known as "Industrial Lighting." It is a very comprehensive volume, stripped of all unnecessary technical matter, and confining itself strictly to the commercial side of the question.

Here is the list:

Books

Industrial Lighting, Commercial Section, N. E. L. A., 1912
Factory Lighting Problems
The Illumination of Metal Working Plants, National Quality Lamp Division 1912

Articles

Title, Paper, and Date

Electrical Equipment of Industrial Plants, Electrical World, May 24, 1913
Lighting of Messrs. Boots' Printing Works, Electrician (London), Mar. 28, 1913
Industrial Lighting, Traveler's Standard, Apr., 1913
Some Points on Modern Lighting, Practical Engineer, May 15, 1913
Notes on Industrial Lighting, Engineering Digest, Mar., 1913
Lighting the New Five Store Buildings of Westinghouse Elec. & Mfg. Co., Lighting Journal, Jan., 1913
Example of Efficient Machine Shop Lighting, Electrical World, Mar. 22, 1913
Industrial Lighting, Electrician (London), Mar. 21, 1913
Lighting of Factories and Workshops, Amer. Gas Ltg. J., Mar. 10, 1913

Demonstration of Industrial Gas Appliances, Amer. Gas Ltg. J., Mar. 10, 1913
Steel Mill Illumination, Electrician (London), Jan. 31, 1913
A Neglected Feature of Lighting Problems, Good Lighting, Jan., 1913
Lighting of Engineering Works by Gas, Oil and Electricity, The Ill'g. Engineer, Feb., 1913
Industrial Illumination, Railway Elec. Engineer, Jan., 1913
Modern Industrial Lighting, Booklet by National Elec. Lt. Association, 1912
Illuminating of Iron and Steel Works, Electrician (London), Dec. 13, 1912
Industrial Illumination and Safety, Electrical World, Apr. 5, 1913
Steel Works Lighting, Electrician (London) supp., Dec. 13, 1912
Equipment and Engineering Essential to Proper Industrial Lighting, Southern Electrician, Oct., 1912
Illumination as a Factor in Mfg. Costs, Elec. Rev. & West. Elec., Oct. 1, 1910
The Installation of Industrial Lighting Systems, Electric Journal, June, 1912
Methods of Calculating Illumination, Electrical Journal, June, 1912
Industrial Illumination and Average Performance of Lighting Systems, Presented before A. I. E. E., June 28, 1912
Modern Factory Illumination, The National Engineer, Nov., 1912
The Equipment and Engineering Essentials to Proper Industrial Lighting, Southern Electrician, Oct., 1912
Practical Industrial Illumination Problems, Electric Journal, July, 1912
Tungsten Lighting in Modern Industrial Establishments, Electric Journal, Dec., 1912
Metal Reflectors for Industrial Lighting, Presented before I. E. S., May, 1913

Jovian Booklet

The booklet of the Jovian Order entitled, "The Reason," is now in circulation. It is a snappy little publication, with attractive covers, and is in the nature of a brief review of the purpose and progress of the Jovian Order. The Constitution and By-Laws are included, and a number of photographs of prominent Jovians, including Henry L. Doherty, and the great "honorary" pair, Dr. Charles P. Steinmetz and Thomas A. Edison.



An Effective Follow-up to Mazda Advertising

By L. J. WILHOITE
Contract Agent, Chattanooga (Tenn.) Railway and Light Company

We have learned that everybody won't buy mazda lamps just because "Edison's dream came true." This is not saying that "His only rival" and "The Edison dream came true" advertising does not exert a strong influence on the public, but it needs to be backed up by the local work of the central station. For example, we have devised an inexpensive little way of showing people what mazda lamps will do.

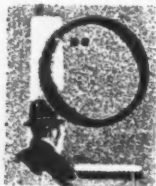
When a new installation is made, our idea is to install, together with the carbon lamps which are also furnished free, one 25-watt mazda lamp free of charge. A card is suspended from the chandelier in which this lamp is installed, calling attention to the fact that it is a present from the lighting company and explaining the difference in efficiency between it and other lamps which have been furnished free throughout the house. It hits the prospect at the "psychological moment" and, as he is now able to see in his own home, how much superior mazdas are to carbons in every conceivable way and considers how relatively low both the cost of installation and upkeep are, he is very often closed up by the simple but very practical scheme outlined above.

Electric Signs for Central Station Advertising

Showing Advantage of Shaping Sign Opportunity to Modern Advertising Demands

By G. E. FULLER,
Manager Chicago District, Federal Sign System (Electric)

What's the matter with electric advertising?



OUR central station salesmen rush to assure us that there is nothing whatever the matter with it—that it is the best and cheapest advertising on earth, whether applied to electric signs, boulevard posts, window

illumination, or what-not.

"Our own central station has an electric sign," one of them assures us. "Our installation of boulevard posts has advertised our city throughout the state. All of our

Analyze the elements found in other forms of advertising such as newspapers, billboards, magazines, etc., and let the central station apply these principles to its own merchandising proposition through an electric sign.

There are only about five points to be kept in mind in this connection:—

1—The right kind of copy, or reading matter.

2—Necessary circulation.

3—Repetition of the idea.

4—Color, to make the copy more vital.

5—A change of copy or reading matter.

Take these five elements in an electric

of copy which is necessary from time to time. A newspaper, which did not change its advertisements, would be a dead proposition as an advertising medium. An electric sign, which does not involve a change of copy, lingers to a slow death after three or four years, though there is no good reason why it cannot be changed and at a reasonable price.

Take for instance a half dozen ideas which could be advertised through an electric sign:—

Electric Fans
Are Cheap Comfort
Buy One Today.

A Blank Electric
Washing Machine
Makes Joy Monday.

Cheap Good Light
Wire Your Home
2 Years To Pay

Electric Power
Cheap, Clean,
Convenient.

30 Days' Free Trial
Electric Flatiron
Take 1 Home Now

Special Sale Today
Percolators
Free Demonstration



Upper and lower views show signs on roof of Harrison street sub-station, Commonwealth Edison Co., Chicago. The company uses several signs, changing reading matter to give reasonable advertising. Middle view shows 60-foot sign of Milwaukee Electric Railway & Light Co. It dominates the entire city, furnishing excellent advertising for the company.

merchants have accepted our flat rate window lighting proposition to advertise their displays and many of the merchants have electric signs. What more can we do?"

Much, I should say, because in only too many central stations, electric advertising has reached the point of saturation and will soon react. We can, however, prevent this by making our electric sign business conform a little more closely to the demands of advertising and so bring up the electric advertising to a point where it will continue to grow in response to competitive advertising demands.

sign; toss them up in a blaze of light and color on the roof of the central station's building, and there is the best and cheapest advertising in the world.

Now, it is no trick to convey a short, vital message on a three-line sign having an aggregate of perhaps fifty letters. Circulation for this copy is secured by having the sign placed where many thousands of people will read it. Repetition of the idea is secured through a flashing operation; colored lamps changed frequently add novelty to the sign and keep it attractive. The stumbling-block in this proposition is the change

The above changes of copy may be open to criticism. Any new-business manager could probably hit upon better copy for a three-line sign not to exceed 25 feet in length, nor to carry more than seventeen two-foot half-block letters on each line. However, the point is that the above changes, selected at random and involving a total of 237 letters, provide for six complete changes of copy and require only about sixty-four letters.

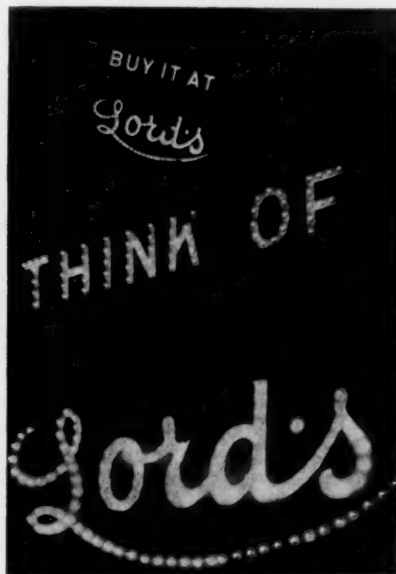
A complete and fully equipped three-line sign twenty-five feet long, mounted to give the lower line an elevation of five feet from the roof, will not, under normal conditions, involve an investment of more than \$600, this price to include, not only the necessary letters, and the frame, but the transformer, first installation of Tungsten lamps, a motor and flasher to operate the sign one line at a time, and the expense of erecting and connecting the sign to service. With the 237 letters involved in the above changes, dozens of other combinations could be worked out to give additional changes of copy without additional expense.

I have in mind one central station which purchased seventy-nine letters and has in three months installed twelve changes of copy without additional investment. Like a well selected space in the newspaper or magazine, the framework for a sign stands ready to receive a message to the public, and that message can be made vital, interesting, and tremendously effective if the ordinary principles of advertising are applied.

The expense of operating an advertising medium of this sort is small, even including a reasonable depreciation of the letters and the frame work in addition to a complete change of lamps renewed each year. Energy should be figured on the basis of the theoretical cost of production. The labor of changing the letters is a small item if the letters are built to hook over the horizontal supports and if service to the sign is convenient so that each letter, individually wired, can be plugged into the receptacle to give quick connections.

Practically, \$10.00 a month will cover this actual operating expense figuring 1,800 hours as the life of 5-watt mazda lamps and energy at 1½ cents per kwh. Many central stations spend more than this for billboard advertising alone, and \$10.00 does not, as a rule, buy very much creditable space in a widely circulated newspaper.

Billboards and newspaper advertising, undoubtedly give desirable publicity, but as an advertising medium for central stations they do not entirely fill the bill. The right kind of a local electrical advertising



Two views of Wm. S. Lord department store sign, Evanston, Ill., the reading matter of which is changed monthly to advertise season sales and supplement newspaper advertising.

medium will do more for a central station than sell electrical merchandise. For instance, it will give publicity to large power customers, thus creating wider interest in this class of business. It can be used to feature special campaigns. It can, in short, be applied wherever newspaper advertising is effective. But, in addition, it has the advantage of aggressively conveying to local merchants the idea that this form of electrical advertising is good for their business.

Thus it is clear that central stations are in a position to extend the principles involved in an electrical advertising medium of their own in other profitable directions, for merchants could be persuaded to make the necessary investment in a well located frame—work on which change of copy could be supplied by the central station furnishing the electric service. One wide-awake merchant in every city can be persuaded to secure a desirable location, erect a suitable framework, and agree to let the central station furnish standard two-foot half-block letters for monthly or weekly changes of copy. Six cents per lamp per week is a fair price for the central station to charge such a merchant, and this rate would yield a reasonable interest on the investment and ten cents per kilowatt hour for energy, and leave a very satisfactory margin to take care of the labor costs of making the necessary changes.

A two or three year contract for this service would be desirable, and it is to be remembered that the same standard letters required by the central station would be used by the customer so that one stock of letters, like a font of type in a newspaper office, could be used by all merchants as well as by the central station. More than one merchant could undoubtedly be persuaded to come into an advertising pro-

position of this kind, and individuality could be secured for each merchant through individual borders and flashing effects as well as through changes in color and copy. Competition between merchants for electrical advertising would involve adequate service on the part of the central station to take care of the changes and look after the details of properly connecting and maintaining such signs. But, think of the revenue, not only based on the kilowatt hour consumption, but on the service itself! Every additional sign installed would mean a lower pro rata operating expense and would not involve a pro rata additional investment. So that the question of profits would be largely a question of the volume of business which could be secured.

The time is not far distant when central stations will realize the possibilities of electrical advertising as applied, not only to their own business, but to general merchandising. Then, we can expect that, from the standpoint of the man on the street, a new era will have dawned for central station advertising, where public opinion will point with pride to the progressive outdoor policy of the central station and to the great things it is doing in making for a bigger, brighter, and more attractive town.

Illuminating Plans for Panama Exposition

The illumination of the Panama Exposition, which will be held in San Francisco from February 20 to December 4, 1915, will strike a new key. Outline lighting, with its drawbacks of glare and dark spaces, will not be used but in its stead, both direct and indirect lighting will be employed, with highest artistic effect, and with all dark shadows eliminated.

At night the exposition palaces with the details of their facades and statuary will be seen with daylight clearness. Great paintings upon the walls will appear in their true daytime color values. Perfect reflections of whole buildings will be reproduced in the lagoons upon the exposition grounds. In the harbor before the grounds batteries of colored searchlights will be trained against the towers and minarets and against the reflecting glass jewels which will be a leading feature of the illumination.

The entire plan of the illumination is in charge of W. D. A. Ryan, director of illumination, who supervised the illumination of the Hudson-Fulton celebration, of Niagara Falls, and who is directing the illumination of the Panama canal throughout its length to the high seas on either side. Mr. Ryan is working with Jules Guerin, director of color, who has conceived a marvelous color scheme which assures that there will be no dead white upon the exposition grounds.

There will be four principal sources of light at the exposition; great batteries of searchlights mounted on pontoons in the harbor; masked batteries of searchlights on the roofs of the exhibition palaces; an indirect system of lighting behind the colonnades by which the statuary, mural decorations and facades of the buildings will be illuminated; and radiant groups of statuary in the courts and throughout the grounds. The interior of the buildings will be lighted with flame arcs and luminous arcs. The direct lighting will be thrown on the facades and sides of the buildings.

The walls behind the colonnades in the various courts will be decorated with mural paintings which will be illuminated by electric globes placed in recesses in the backs of the columns. These lamps will not be visible from the floors of the colonnades or

from the courts. They will be set in the columns at heights of ten, twenty, and thirty feet. The illumination of the paintings will be absolutely controlled by changing the size of the light units and the curvature of the mirrors that will reflect the lights against the walls. Kaleidoscopic effects will be obtained by introducing colored bulbs. A special type of tubular lamp has been developed for fluted columns.

The Pacific Gas and Electric Company has contracted to supply all the electricity, gas and steam that will be used during the exposition. This contract represents considerably more than a million dollars, and is the largest that has yet been entered into by the exposition company. It provides that the fair company will use a minimum of 12,000 hp. during the period of construction and 20,000 hp. during the exposition.

A mammoth generating plant will be erected on the exposition site and will serve the dual purpose of generating power for the exposition and of the central station's own special exhibit. After the exposition, the generating plant will be used by the Pacific Gas and Electric Company as a sub-station.

Increase of Public Commissions

The following list of states with commissions having jurisdiction over public utilities, or those in which public utility commission bills are still pending, was compiled by the Department of Examinations and Reports of H. M. Byllesby & Co. These statistics clearly show the modern trend of things, and suggest that the securing of favorable relationships with these commissions must become more and more of a central station activity from now on. It is to be realized in this connection that when the commissions come to understand the aims and policies of legitimate public utilities they are disposed to play fair. Consequently, the central station that does not take its public utility commission into full confidence is defeating its own best purposes.

States with commissions having jurisdiction over public utilities:

Arizona	Nevada
California	New Hampshire
Colorado	New York
Connecticut	New Mexico
Georgia	North Carolina
Idaho	Oklahoma
Indiana	Ohio
Kansas	Oregon
Maine	Rhode Island
Maryland	South Carolina
Massachusetts	Vermont
Michigan	Virginia
Missouri	Washington
Montana	West Virginia
Nebraska	Wisconsin, and the
New Jersey	District of Columbia

Public utility commission bills are pending in the following states:

Delaware	Minnesota	
Illinois	Pennsylvania	Tennessee

Public utility commission bills have recently been defeated in Iowa, Kentucky, South Dakota and Utah.

Public utility commission bills have recently been defeated in Iowa, Kentucky, South Dakota and Utah.

There are no gas and electric utility commissions in the following states; however, there are railroad commissions in all, except Utah and Wyoming, most of them having jurisdiction over telephone, telegraph and street railway companies:

Alabama	Mississippi
Arkansas	North Dakota
Florida	South Dakota
Iowa	Texas
Kentucky	Utah
Louisiana	Wyoming

Electrifying the Ice Famine in Willimantic

Refrigeration the Local Central Station Solution for Clashing Interests, Dwindling Ice and Soaring Prices



LAST winter was an "open" winter in New England, as it was, in fact, throughout the country, and it presaged an ice famine for the ensuing summer. For it takes long, continuous spells of snappy-cold weather to make good ice, and plenty of it, and when even rugged old New England goes back on the country, the case is most serious indeed.

Now, the little Connecticut village of Willimantic and adjoining territory, was no more immune from the "soft" weather of last winter than the rest of New England, and thereby hangs a tale of shortage in natural ice for this region; embroilment between the city and the ice interests over the question of municipal ice which had been harvested from the City Reservoir; persistent rise in prices related to the restricted ice supply; and, finally, the new isolated ice plant deal of the Rockville-Willimantic Lighting Company, which meant a worthwhile power opportunity for itself, as well as the safest way over the rocks for the local people.

Here is the story in detail. In the first place, the City of Willimantic had its charter amended so as to allow it to harvest ice from its own reservoir, not because it had foreknowledge of an open winter, but simply that it might have this power with others, presumably to help offset the expense of operating the municipal water works. However, it proved to be a case of, "Well, I got it, but I can't get rid of it," meaning that the city had the right to harvest the ice but not the right to dispose of it.

The city harvested about 700 or 800 tons of ice and stored it in a temporary shed, which had been built on the shores of the reservoir. The municipal authorities figured the cost of harvesting; apparently it was very low. Then they examined the current prices of the ice man; apparently they were very high. The ice man was selling his product in large quantities for 35 cents per 100 pounds, and for 45 or 50 cents per 100 pounds when he retailed it in ten-cent pieces to residents. To the City Fathers, who, as is commonly the case, had omitted to consider overhead charges, these profits seemed too big and too easy, and they thought they had it all figured out how they could get their ice into Willimantic homes at a relatively much lower price, and yet make a little money for the town treasury.

However, the ice men scented this prospective municipal competition from afar and it was not a pleasant odor to their nostrils. It is a matter of years to work up an ice business, which is precarious business at best, and the municipal ice project simply had to be checkmated somehow. Hence, the ice men got together and unanimously agreed to offer their supply of ice to the City of Willimantic, and allow the latter to take care of the entire business, with this proviso, however, that the city also should purchase the horses and wagons of the ice dealers. The up-shot of the matter was that the municipal authorities refused to buy either ice or horses and wagons, as they could not use the latter because they did not have the right to retail the ice. At the same time, the ice men naturally felt that if they disposed of their ice, they would have no further use for the horses and wagons.

The city's refusal to purchase the private

ice supply gave matters a new turn, and incidentally brought the central station opportunity a step nearer. The ice men now endeavored to sell their product where they could, and one of them, who controlled about 70 per cent of the entire local supply, sold his ice to the Connecticut Ice Company, an outside concern, which is styled "the trust" in Willimantic. The local man's horses and wagons also were included in the deal. This was not at all relishing to the City Fathers, and when two other local dealers proceeded to sell their supply, the former requested them to hold onto their ice, informing them that the city was now ready to sell its harvest to the local dealers, and striving to show them that they therefore could continue in business and make some money. Be it remembered, however, that 70 per cent of the total ice supply previously available in Willimantic had been sold to an outside



W. L. Lewis,
Mgr. the Rockville-Willimantic (Conn.) Lgt. Co.

party. Thus, a near-ice-famine ensued, the price of natural ice went up, and the onward march of the central station opportunity now could be distinctly heard.

The city and the ice dealers quickly came together on the following basis of agreement. The latter insisted that they were not going to purchase the municipal supply at the stated figure and sell it, according to the municipal idea, for three or four dollars a ton. They stated specifically that they would buy the ice from the city for \$2 a ton and sell it about town for not less than \$6 a ton. The city came to these terms with the result that the following schedule of prices now prevails in Willimantic: the price in wholesale lots for the ice which was purchased from the city, is not less than \$6 a ton; the wholesale price for ice which the local dealers harvested themselves, is \$8 a ton; the retail price is \$12 a ton, it being worthy of note that no five-cent pieces of ice are being sold in Willimantic this summer—only ten cent pieces. The summer has not been very warm, which is the only reason why prices have not gone even higher, because the blunder of the local authorities in letting 70 per cent of the city's already meagre ice supply go out of town has reduced the available supply much below the demand of last summer, and it seems inevitable that ice will have to be shipped in at a higher price than now prevails—that is to say, unless many of the larger consumers of ice look into the isolated ice plant proposition of the Rockville-Willimantic Lighting Company. Just what this proposition is will shortly be described here.

The clash of local interests outlined above had its stage-setting in the cooler months, the whole thing happening much more quickly than it seems in the telling. But the hot months were imminent, and everybody in town was talking ice, and worrying about ice, and wondering whence he was going to get ice to keep his meat and eggs fresh in refrigerator at home, and the butter hard, and the bacterial count in baby's milk supply below the danger point—and at what lofty price. Taking a stand as citizens and voters, the people said that they should be entitled to the city's ice at cost. The municipal officials came right back with the statement that they had no right to retail their supply, the ice dealers supplementing this statement with the reminder that they would have the city enjoined if it did attempt to retail its ice.

The whole situation was just so much tissue paper for the local central station, once its opportunity was clear in its own mind. Under the efficient guidance of the manager, W. M. Lewis, it took quick and aggressive action. A copy of the daily paper, which nightly covered the situation, was mailed to every likely refrigerating prospect in town—the saloons, the hotels, the meat markets, the ice cream manufacturers, and all their kind. Thereupon, all the nearby manufacturers of ice-apparatus were rounded up, closely informed about the local situation, and turned loose on the town. And the central station followed hot-foot with the story of its attractive power rates and cheap artificial ice-making, as the rational way out of the local embroilment.

The point is that whatever refrigerating apparatus is installed in town, is being worked on the company lines exclusively during "restricted hours," and this brings the rate for current down very low.

The refrigeration customer has three discount opportunities on every bill he receives from the Rockville-Willimantic Lighting Company, the first being the "restricted hour" discount of 12½ per cent off the gross bill. These so-called "restricted hours" are from 5 p. m. to 9 p. m., beginning not later than September 15, and ending not later than October 15; from 4.30 p. m., to 9 p. m.—beginning not later than October 15 and ending not later than January 22; from 5 p. m. to 9 p. m., beginning not earlier than January 15 and ending not earlier than March 15. It is particularly to be noted in this regard that during the summer months, when the quantity of ice or cooling effect is most needed, there are no restricted hours, yet the discount applies just the same. If the apparatus is used during the season of "restricted hours" time switches are connected to insure the company against these refrigerating plants consuming current during the "peak."

The second discount is applied on the gross bill less the 12½ per cent discount, and is termed "discount for load factor." This is arrived at by dividing the kilowatt hours on the monthly bill by the horse-power of the motors installed on the apparatus. The quotient will be figures corresponding to 20-23, 46-50, or 98-107, making the second discount 1 or 9 or 18 per cent, as the case may be. The third discount is the 5 per cent off the net bill for payment on or before the tenth of the month.

The reasonableness of this rate for refrigerating purposes and the consequent value of motor-driven ice plants as a solution of the Willimantic ice famine now prevalent, can be made more apparent by quoting a typical power bill, less the three discounts.

"2,000 kwh.	\$102.00
640 kwh. excess at 3.1 cents ..	19.84
2,640 kwh. gross bill	\$121.84
12½ per cent restricted use discount	15.23
	\$106.61
21 per cent load factor discount ..	22.38
	\$84.23
5 per cent cash discount	4.21
Net bill	\$80.02

Of course, the hot weather had hardly more than begun when the statistics, which form the basis of this article, were available. However, a careful study of the above bill and a mental application of the same to the relatively high cost of natural ice and the relatively low cost to the large consumer of running an isolated refrigerating plant will make it clear why the Rockville-Willimantic Lighting Company has "cut in" so well with respect to its new proposition. Three electric refrigerating plants already have been installed in town, none of which were sold directly by the central station, but by the manufacturer, who has been so powerful a factor in the cooperative winning of the town. Two good additional prospects were in sight at the time this article was written, and probably have been closed long since. Furthermore, large beef houses of Armour and Company and of Swift and Company, are in the territory of the Willimantic central station, and Mr. Lewis believes that they can be induced to make similar installations. The central station has a clear case and should win, for it is able to show that its way is a particularly reliable and effective way to avert an ice famine in Willimantic, and a very reasonably priced way into the bargain. It also shows the danger of municipal meddling with business which is better done by private interests.

Hot Point Day in Hot Springs

Well Planned "Teaser" Copy Made Women Curious and Brought Success to Central Station Sale

By A. ASHER JONES,
Commercial Manager, Citizens Electric Company,
Hot Springs, Ark.

I am submitting a brief description of "A Rebate in Current With Appliance Sale," which has worked out very satisfactorily in this city as the following record will show. That much advertised event, known as "Hot Point Day," was to fall on May 10, 1913, and the new-business department of the Citizens Electric Company decided to take advantage of the opportunity it offered, and, if possible, make a record sales day out of the date by selling El Tostovos on a rebate basis in the form of current given away with the purchase of each appliance.

However, one inherent difficulty militated against the success of the idea—although the name, "Hot Point Day" was well enough known in the electrical industry, it had no significance for the general public. Hence, we had to cast about us to find some way of attaching significance to it. Finally, we hit upon the happy idea of making capital out of the very vagueness of the name, working out a series of so-called "teaser" advertisements which running for a week in advance of "Hot Point Day," piqued the curiosity of the local women, and opened the door to our subsequent sales effort.

Our first piece of copy of this nature read, "May 10th for the Ladies." This copy ap-

peared in the dailies and specially prepared cards were hung in our street cars for ten days previous to date of sale. Three days before the sale, the significance of the above date was revealed to the public by means of the following copy: "Ladies, May 10th Is Hot Point Day," with the body of the ad explaining the reduction of the sales price of the El Tostovos from \$2.00 to \$1.00 by means of the current rebate to the purchasers of the same.

On May 10, the headlines were changed to read, "Ladies, Today Is Hot Point Day." This "teaser" copy worked up considerable interest among the women of Hot Springs and the majority were continually requesting information relative to the meaning of "May 10th for the Ladies." Newspaper offices were called upon to explain the mystery, but we had sworn them to secrecy, and the inquirers were told that no further explanation other than what was in the papers could be given.

Subsequent to the date mentioned, educational literature, in the form of advertising booklets which explained in detail the convenience of the various electrical appliances, was delivered to each house along our lines of service. The housewife was requested to read this literature over carefully and acquaint herself with the prices of the many appliances. Our idea was to concentrate the attention of the consumer, for at least a week, on electrical appliances, which we did by means of this class of literature. Hence, by May 7, the nature of the sale had been revealed, whereupon our representatives got in touch with the public, and as a result of the twelve hours' campaign in the various districts the following appliances were sold: 125 El Tostovos, 25 Electric Irons, 23 Miscellaneous appliances.

On June 12, we introduced a sales date on electric irons and used the same method to good advantage, advertising as follows: "\$1.75 Was \$3.50, You'll Want One, July 12th." The plan worked out very successfully and on July 12, we advertised the nature of the sale and offered coupons, worth \$1.00 in current, to each purchaser of an electric iron, between the hours of 9.00 A. M. and 5.00 P. M. This scheme resulted in the sale of 92 electric irons. While this is not a very large number of appliances to sell, yet our city numbers only 15,000 population, including the suburbs, where our lines do not extend, and, in our opinion, the results are fairly good. It required considerable ginger on the part of our sales force to make this plan the success it proved to be, but it can be duplicated in any central station.

The Electric Message of "Truth" for Advertising Clubs

The Associated Advertising Clubs of America sounded a clarion note of truth in their recent convention at Baltimore. The ad men definitely put themselves on record as believing that truth was the only legitimate basis for all advertising endeavor, and their expressions of lofty purpose, with respect to raising the ideals and ethics of their profession on a truth basis, created something of a sensation throughout the country.

It was particularly significant that this intensely modern expression of a high advertising ideal should be symbolized, as it was, by the most modern of advertising devices, the electric sign. O. J. Gude, president of the O. J. Gude Company, of New York, presented the Association with an electric sign, sixty feet high by sixty feet wide. It was erected in Baltimore by the Gude Company, and kept burning throughout the Convention. The sign read about

the circle: "Associated Advertising Clubs of America," while the word "Truth," in large capitals, occupied the center of the display. An outline map of North and South America, in green, formed the background of the display, the white letters and the two red circles forming with the green



Truth was the adopted symbol of the Associated Advertising Clubs of America in recent convention at Baltimore. This electric sign was the method of symbolism.

the complete color scheme. The word "Truth" remained on constantly, but the other features of the display came and went. First, the outline of the two continents would appear; then the outer circle of red, and finally the Association name. This sign, which was such a strong feature of the Convention, will occupy a position on top of the proposed Advertising Building at the Panama-Pacific Exposition in San Francisco in 1915.

Garage for Edison Company

The New York Edison Company will invest an appropriation of \$30,000 in an electric garage. The garage will be completely equipped for charging and maintenance of electric vehicles exclusively, and the appropriation will be spent at the rate of \$10,000 per year. The Electric Vehicle Association of America will have jurisdiction over the expenditure.



A Cheap Aid to the Electric Salesman

By J. M. FRIED
Comm'l Agent, Northumberland County Gas & Electric Co., Sunbury, Pa.

For electric and gas companies that cannot afford an elaborate followup system the ordinary desk calendar pads will be found a very effective reminder. Furnish each salesman with a pad and every evening have him put down his prospects under the date for follow up.

Too much cannot be said for such a "tickler" system as it is absolutely essential to success in the commercial end of the game. The consumer notices such business-like methods of solicitation and approves. He believes that the company has a good system and will not neglect him and he will be more liberal in his patronage.

This Trade Mark The Guarantee of Excellence on Goods Electrical.



"Power"

"How to get more of it and pay less for it"
 "How electricity shortens the road to efficiency"

These are the subjects of our August advertisements to a million business men, the second chapter of our Business Man's Campaign. The "more power" argument appears in a double page advertisement in System; the "electricity—efficiency" advertisement appears in Scientific American, Literary Digest, Popular Mechanics and Popular Electricity.

In these advertisements the advantages of electric light and power in factory, office and store are emphasized; the fact that "modern efficiency leads inevitably to electrification" is the keynote of the argument.

Of special interest to all G-E agents are the closing paragraphs in which the reader is urged to "*Take up the matter today with your electric power and light company or any General Electric Company's dealer or agent in your vicinity. You'll find them more than glad to cooperate with you and, no matter how complex your problem may be, they have at their command the service of any part of our organization that may be most helpful to them and to you.*" This is another example of the continuous co-operation enjoyed by all G-E agents.

General Electric Company

Atlanta, Ga.
 Baltimore, Md.
 Birmingham, Ala.
 Boise, Idaho
 Boston, Mass.
 Buffalo, N. Y.
 Butte, Mont.
 Charleston, W. Va.
 Charlotte, N. C.
 Chattanooga, Tenn.
 Chicago, Ill.
 Cincinnati, Ohio

Cleveland, Ohio
 Columbus, Ohio
 Davenport, Ia.
 Dayton, Ohio
 Denver, Colo.
 Detroit, Mich.
 (Off. of Agt.)
 Elmira, N. Y.
 Erie, Pa.
 Indianapolis, Ind.
 Jacksonville, Fla.
 Joplin, Mo.

Largest Electrical Manufacturer in the World
General Office, Schenectady, N. Y.
ADDRESS NEAREST OFFICE



Kansas City, Mo.
 Keokuk, Ia.
 Knoxville, Tenn.
 Los Angeles, Cal.

Madison, Wis.
 Louisville, Ky.
 Mattoon, Ill.
 Memphis, Tenn.
 Milwaukee, Wis.

Minneapolis, Minn.
 Nashville, Tenn.
 New Haven, Conn.
 New Orleans, La.
 New York, N. Y.
 Omaha, Neb.
 Philadelphia, Pa.
 Pittsburg, Pa.
 Portland, Ore.
 Providence, R. I.
 Richmond, Va.
 Rochester, N. Y.

Salt Lake City, Utah
 San Francisco, Cal.
 St. Louis, Mo.
 Schenectady, N. Y.
 Seattle, Wash.
 Spokane, Wash.
 Springfield, Mass.
 Syracuse, N. Y.
 Toledo, Ohio
 Washington, D. C.
 Youngstown, Ohio

For Texas, Oklahoma, and Arizona business refer to Southwest General Electric Company (formerly Hobson Electric Co.) Dallas, El Paso, Houston and Oklahoma City
 For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont.

4365



The Trade Mark of the Largest Electrical Manufacturer in The World.

Rochester's Electric Greeting to Elks

Central Station Signs Gave Savor to This Brilliant Event—and to More Serious "Rochester-Made Week."

The Elks held their reunion in Rochester, N. Y., from July 7 to July 12, and it is doubtful if a fraternal order ever received a more royal electric welcome anywhere. In point of electrical decorations, Rochester, which is one of the model electric cities of the East, fairly outdid itself on this occasion. Everywhere, the expert work and enterprise of W. S. Wallace of the Commercial Department of the local central station manifested

already mentioned, read "Welcome," and "Come Again."

The electrical decorations on the Elks' Home, and in its immediate vicinity, were likewise worthy of note. The outlining and the sign, "Welcome B. P. O. E.," were temporary affairs, but the balance of the lighting on this building was permanent. The large elk at the top was equipped with 300 ten-watt mazda sign lamps, and is twelve feet by fourteen feet. The electric lighting apparatus of the city, although it could not burn by day, yet played a part in the daytime decorations. All of the electric light poles on the principal thoroughfares of

The Rochester Railway and Light Company also had another recent opportunity to shape its ever-changing and timely sign messages to a current event of more than passing importance and significance. The occasion was "Rochester-Made Week," which was instituted at a meeting of the Manufacturers' Trade Committee of the local Chamber of Commerce, in which body the Rochester central station is amply interested. The purpose of the affair was to advertise and boost Rochester-made goods to Rochester people and to give the latter a more adequate knowledge and better appreciation of manufacturing conditions in their own city. The lighting company got into the game by changing two of its signs—one in four-foot and the other in thirty-inch letters—to read "Rochester-Made Week." The four company windows also were filled with Rochester-Made appliances, both gas and electric.

A concrete evidence of the value of the above window display is contained in the following interesting incident of the week. A local man was looking at the display of the Rochester Stamping Company in the central station window when he turned to W. S. Wallace of the Commercial Department, and said:

"I was not aware that there were any electric irons, percolators, chafing dishes, toasters, or anything of the sort, made in Rochester."

As a matter of fact, as Mr. Wallace pointed out to the man in question, most of the utensils of one of the largest manufacturers of heating appliances in the country are made right in Rochester by the local company which exhibited in the central station window. This was only one example of the many revelations "Rochester-Made Week" held in store for Rochester people, as 90 per cent of the local merchants gave up their windows to the displays of local manufacturing factories.

Electric Vehicle Situation in Ohio

The State of Ohio shows a total registration of 3,610 electric vehicles. The Cleveland registration sums up to 1,838; Columbus has 459; Toledo 367; Cincinnati, 238; Youngstown, 116; and Akron, 99. The electric vehicles approximate 6 per cent of the total automobile registration of the State.



Main St., Rochester, as it looked at night during Elks' reunion. Note electric-lighted clock faces and elk heads. Their unusual size and brilliancy helped to make the street a blaze of light as far as the eye could reach.

itself, Main Street and other conspicuous sections of the town being fairly aswim with light. The general electrical decorations were grouped about and harmonized with a number of main displays of unusual distinctiveness and brilliancy. These feature displays included five canopies with illuminated clock faces; seven large illuminated Elk heads; the electrical signs of the Rochester Railway and Light Company with their blazing words of welcome and five electric road signs which also extended lighted words of greeting to the visiting Elks along the principal highways of the town.

Each one of the canopies, with its clock face, eight feet in diameter, contained 1,000 eight-candle power incandescent lamps. The numerals and the hands on the clock faces were studded with white electric lamps, while in each case there was an eighteen-inch red electric star above the numeral "XII," and a ring of purple lights, fourteen feet in diameter, around the dial. The canopies all were four-sided structures. As there were five of them, they represented a total of five thousand eight-candle power lamps, consuming thirty watts each, and making a connected load of 150 kw., which burned from 8 o'clock in the evening until 2.30 o'clock in the morning, with the exception of 11 o'clock each night when they were extinguished for one minute in recognition of the Elks' custom.

The elk-heads measured twelve feet across the antlers, and read "Welcome, B. P. O. E." They contained 450 four-candle power lamps together representing a connected load of sixty-three kw. They were operated the same as the canopies. The lighting company also changed three of its four-foot and two of its thirty-inch letter signs to read the same as the elk-heads. The road signs,

the city were bedecked with non-illuminated papier-mache elk-heads, which were three feet in width. These, together with a grouping of American and Elks flags about the posts, afforded a beautiful daylight effect. There were some 800 of these papier-mache heads and an equal number of flags used all told. Finally, it is an interesting commentary on the way the whole city took hold of the idea of greeting the Elks electrically that many of the merchants included electric emblematic signs in their decorations.



Showing electric decorations on Elks' home during Rochester reunion of this order. 300 ten-watt mazda lamps were used to light top elk sign.

Let Our Experts Do This For You



The first good industrial lighting installations were planned by Buckeye experts.

We employed experienced mill men and made them lighting engineers. As a result, the work of these experts has been thoroughly practical and satisfactory. Through their common-sense and ability to apply illuminating engineering principles to the practical needs of our customers,

BUCKEYE MAZDA LAMPS

are known today in every industry as the standard of quality, and the Buckeye engineers are acknowledged to be the highest authority on industrial lighting practice.

The Buckeye Electric Works

OF GENERAL ELECTRIC CO.

CLEVELAND

CHICAGO

PITTSBURG

BOSTON

H. E. WELLS, AGENT, DALLAS, TEXAS

The Lamp of Industrial Service



The first good industrial lighting was done with Buckeye Lamps.

At the time when other tungsten lamps were considered too fragile even for commercial lighting, Buckeye tungsten lamps were giving satisfaction in textile mills and steel plants. Today the

BUCKEYE MAZDA LAMP

is the acknowledged standard of quality for all industrial lighting, and there are more high-class industrial installations of Buckeye Mazdas than of any other brand.

The Buckeye Electric Works

OF GENERAL ELECTRIC COMPANY

CLEVELAND

CHICAGO

PITTSBURG

BOSTON

H. E. WELLS, AGENT, DALLAS, TEXAS

Electrical "Fourth" in New York

*Brilliant Public Illumination Replaces
Quondam Noise and Fireworks*

If there was anything that gave particular tone and point to the "Safe and Sane" Fourth of July celebration in New York City this year, it was the universal and brilliant electrical illumination of public places. It was significant of the trend of the times that City Hall and Bronx Borough



Brilliant electric illumination of city parks was a salient feature of the New York "Fourth," which was not only Safe and Sane, but emphatically electrical. Picture reproduced by permission N. Y. Edison Co.

Hall, and the statues and monuments that symbolize the part New York played in its country's defense, should glitter in outline on the evening of the Fourth; that the various municipal parks should be veritable gardens of electrical beauty. It was even more significant that electrical illumination should wholly take the place of the more dangerous and transitory public displays of fireworks.

Getting down to figures, electrical illuminations were arranged by the City Fathers for fifteen places in Manhattan and the Bronx. Seventeen thousand electric bulbs, of 8-candle power each, were used, making a total of 136,000 candle power of illumination. The lights were turned on during three nights, July 4, 5 and 6, from 7.30 p.m. until midnight. The New York Edison Company supplied all current free, the only cost to the City being the stringing of the lights which was done by a number of private electrical contractors. The Edison Company also supplied, without any cost to the city, the lights, wiring and current used in the illumination of City Hall.

The general plan of illumination was to outline buildings, arches and monuments wherever they occurred, also the park structures; to string incandescent lights through park trees and to festoon the poles with electric lights. Illuminations included, in Manhattan, City Hall, Washington Arch, Seward, Tompkins, Columbus, Chelsea, Central and Thomas Jefferson Parks; Sailors' and Soldiers' Monument and Grant's Tomb. The illuminations in the Bronx included Bronx Borough Hall, McKinley Square, St. James and St. Mary's Parks.

New York's "Safe and Sane Fourth" was a complete triumph for the modern idea, and pretty convincing evidence of the ever-widening popularity of electricity. The New York Edison Company had an opportunity to bring itself favorably into notice as a public-spirited corporation, and there is ample evidence that it fully grasped the opportunity.

Engineering Society Convention

Hotel Schenley, Pittsburg, will be the headquarters of the Illuminating Engineering Society Convention which will be held September 22 to 26. The program, as outlined at the present time, covers an exceedingly interesting set of papers. In addition to the technical sessions, the local

committee has arranged for a series of entertainment features for both delegates and ladies, including golf, tennis, base ball games, automobile rides, theater and card parties, and a banquet at which some innovations are promised. Inspection trips have been arranged to several industrial plants, including the Westinghouse Electric & Manufacturing Company, Macbeth Evans Glass Company, and the Carnegie Steel Company.

Sign Transformers



You
cannot
buy
better
at any
price

They
are
right
all
the
time

No SIGN TRANSFORMER will give you better service or more satisfied customers than

PEERLESS

THE ENTERPRISE ELECTRIC CO.
WARREN, OHIO

CONLON ELECTRIC WASHER AND WRINGER

BELTLESS CHAINLESS TROUBLELESS
AND
PROOF AGAINST CARELESSNESS

On account of the stringent liability laws now being enacted in every state, we have designed the "CONLON ELECTRIC" to be absolutely "FOOL PROOF"—made it so that the most timid woman can operate without fear of injury or accident.

Every gear and moving part is encased so that the operator cannot possibly come in contact with them, and the wringer is equipped with *patented safety release*.

It is perfectly sanitary. The metal extends to the top of machine on the inside, leaving no crevices or corners between metal and wood to absorb the dirty soapy water.

There are no gears inside to injure the clothes.

The cylinder is automatically reversed by an absolutely new mechanical movement, having by far fewer parts than any other reversing cylinder machine on the market — this eliminates trouble repair calls for you on wash days.

The "CONLON ELECTRIC" enables you to offer your customers just such a machine as they have been waiting for — you will find it easy to sell them at a good profit to yourself.

You will find the "CONLON ELECTRIC" the machine you will want to sell and can sell to your customers — the machine you can stand back of and recommend for its "stay-a-running" qualities.

Write to-day for prices and discounts to

**Conlon Electric
Washer Co.**

312-320 No. May St.
Chicago, Ill.



ELECTRICAL MERCHANDISE AND SELLING ELECTRICITY

AUGUST, 1913

INDUSTRIAL LIGHTING

The market for industrial lighting, as the term is now understood, has literally been created within five years by the manufacturers of incandescent lamps and metal reflectors. These manufacturers saw the opportunity and developed it to a point where this class of business is a vital factor in their annual sales.

But the largest part of the industrial lighting field is not touched and cannot be touched directly by these manufacturers. They are restricted to the large industrial plants that use many hundreds of lighting units. The smaller industrials, in which equipment is counted in tens, belongs by economic law to the central station.

Will the central station see the opportunity as the lamp men saw it?

Of course, the interest of the central stations is different. They cannot profit in any great measure by the sale of lamps and reflectors. In all but very few cases, they cannot profit by the installation of wiring. Their whole interest lies in improved service to the customer, in reducing the peak load and selling the current elsewhere to better advantage and in using their skill as illuminating engineers as an entering wedge or clinching argument to their solicitation of power business.

Whether this interest is sufficient to warrant a central station of undertaking the reformation of lighting practice in the small industrial plants on its lines, is a question which in every case must be answered locally. Chicago, with its "second story workers," (a special crew of solicitors who work exclusively on business above the ground floor) has answered the question in the affirmative. It is unbelievable that conditions in Chicago are absolutely unique in this regard. We believe that the opportunity may be found in a greater or less degree wherever one finds any number of small manufacturing concerns, and that it will pay handsomely every commercial manager to investigate his local field thoroughly for the twofold profit that may exist there.

"SEE HOME FIRST"

All the big railroads of America have joined hands in a "See America First" movement, a national publicity campaign that is

turning the eyes of thousands of tourists from Europe to the scenic wonders of our own country. Out in Grand Forks, North Dakota, W. H. Brown, Manager of the Red River Power Company, has taken the germ of this idea and given it a local and a commercial application which comes as a refreshing inspiration.

It is a curious thing how little the average man knows about his home town. If you visit a city a thousand miles away, and that city happens to be the center of the steel industry, you will jump at an opportunity to go through the mills and see the marvels that they contain. We are always most interested in the show places of some other city and never give the slightest attention to the high spots of our own town.

In Grand Forks, there is a Chamber of Commerce made up of the men who dominate the business life of the community. It is a well organized Chamber and the spirit of boost is strong. Grand Forks business men are cooperating to promote the prosperity of the community, but it occurred to Manager W. H. Brown of the central station, that for all that, the men of Grand Forks know just about as much of the inner workings of the industries that make Grand Forks as is customary. So he suggested a series of what might be called "See Home First" excursions, the idea being that the members of the Chamber of Commerce should devote one afternoon each week to visiting, inspecting and studying one of the representative business institutions of Grand Forks. It was pointed out that here was this body of men anxious to cooperate, and yet ignorant of the vital details of each other's business. It was shown that a visit to each local industry, with the head of that industry acting as guide and lecturer, would not only be exceedingly interesting and instructive, but would infuse a spirit of intelligent sympathy for that industry which through the Chamber of Commerce would spread over the community. The suggestion was enthusiastically approved and adopted.

The third of these inspection tours brought practically the entire membership of the Chamber of Commerce to visit the plant of the Red River Power Company. Manager W. H. Brown was the host and other members of his staff assisted in entertaining the visitors. These business men of Grand Forks went through this power plant, step by step, with a deep and sincere interest. All the details of the modern power plant were explained; all the human interest features of the modern central station service were unfolded. These men saw with their own eyes the perfection of the system which makes a light and power service possible. They went away appreciative and friendly. Of course the central station has a more conspicuous axe to grind through such a visitation, yet no manager need feel diffident about suggesting Mr. Brown's "See Home First" scheme. There are few manufacturers who will not be more than proud to receive such a visit from the Chamber of

Commerce. It is an honor to which his pride will respond promptly.

There are few cities where this idea of Mr. Brown's will not work a wide influence for civic betterment, and in every case it will win publicity and friends for the central station, unbuyable, and almost inaccessible in any other way. Here is one thing for you to do as soon as your Board of Trade resumes its activities after the vacation period.

THE ELECTRICAL WAR TAX

In a recent argument in behalf of the Society for Electrical Development, J. Robert Crouse made the statement, that of the \$80,000,000 which is paid out every year as sales expense in the electrical industry, at least \$60,000,000 is spent in a competitive struggle for existing business and only \$20,000,000 in developing a wider popular demand for electric service and appliances.

If these figures are true, and Mr. Crouse is not in the habit of quoting figures loosely, there is obviously an almost criminal waste of energy within the industry and an equally criminal negligence of the opportunity for increasing sales. That manufacturers and distributors should fight so desperately for existing business and fail to contribute to the growth of the business as a whole, implies, in either case, blind selfishness—or selfish blindness—as you prefer.

At this time, the Society for Electrical Development appears to be about the most practical vehicle for a movement in the other direction. Its plans, as announced, are a bit vague and altruistic, but that is largely because definite plans cannot be made until a minimum fund of \$200,000 is pledged, and the pledgers of the fund consulted regarding the ways in which they want their money spent. We understand that the Society is still considerably short of this minimum. That is a pity, and calls for concerted action upon the part of those in position to influence membership.

The central stations are in this position: At the present time, manufacturers and distributors spend a large proportion of their sales effort and expense to compete for central station business. The central stations are almost alone in spending money to educate the public. If the central stations made it known that they were behind the Society for Electrical Development and that they expected the manufacturers and jobbers from whom they buy to become identified with it, there would be a very rapid roundup in the right direction.

This may be unethical, but is it any more unethical than the present policy of encouraging internal competition at a time when the great need of the industry is expansion? As matters now stand, the \$60,000,000 referred to by Mr. Crouse is a civil war tax—a fund we waste in fighting among ourselves for our present inadequate market. Is it too much to ask that one-third of one per cent of this waste be devoted to winning a larger market in which all would share?

Report of Ohio State Convention

A Record-Breaker in Attendance; a Success in the Scope and Suggestive Value of its Papers

The annual convention of the Ohio Electric Light Association was held at the Hotel Breakers, Cedar Point, on July 15 to 18, inclusive. A record-breaking attendance of 476 gave point to one of the most successful conventions in the history of the Association. Of chief interest to this publication, of course, was the commercial session, which developed a number of timely and interesting papers, and liberal and vigorous discussion of the same. However, there were a number of other addresses, which deserve at least passing mention, including President J. C. Martin's opening address; Mathias E. Turner's address on "Cooking by Unity-Load-Factor Electric Ranges;" an address by S. G. McMeen, president of the Columbus Railway and Light Company on "The Human Equation;" and a talk on "Franchises," by James V. Oxtoby, counsel for the Edison Illuminating Company of Detroit.

The opening paper of the commercial session was entitled, "Retention of Business of Dissatisfied Customers," by Thomas F. Kelley, sales manager of the Dayton (Ohio) Power and Light Company. This paper, and the discussion which bore on it, dealt principally with the matter of credits and guarantees that should be required of new customers. Mr. Kelley emphasized the very small percentage of business that is lost by the central station which makes a practice of extending credit to new customers, and the large percentage of good will that is engendered by such practice. Discussion on the paper, pro and con, was evenly divided.

J. E. North, Commercial Manager The Springfield (Ohio) Light, Heat and Power Company, presented the second paper of this session which dealt with "New Business." It was a comprehensive analysis of the various factors that produce new business. Solicitors, solicitors' reports, the sale of appliances and motors, the demonstration of appliances, window display, advertising, power business, cooperation and competition—all these matters were discussed in the paper. One of Mr. North's most important suggestions was that a new-business committee of not less than five should be appointed to secure information and furnish advice pertaining to the subject of new business to all the companies or members of the Ohio Association and present a report to the Association at the next annual convention. By this plan, the companies would forward information to this committee concerning methods and plans which have been used to get new business or to keep old business, while, on the other hand, the companies could go to the committee for advice. Mr. North's idea met with such favor that a committee of three was later selected to appoint such a committee.

Prof. F. C. Caldwell's paper on "New Applications of Electricity as an Adjunct to New Business," took up improved types of electric cooking apparatus; the heating pad; electrically heated blankets or quilts for open-air sleepers; electric hot and cold air blowers; the water sterilizer; the radiant room heater; vacuum cleaners; refrigerating machines; drying closets, through which heated air is blown by means of the electric fan; the motor-driven mangle or ironing machine; the kitchen power-table; the ozonator; and other latter-day electric devices which are not as yet commonly used, but which help the new-business manager

to widen his market. This paper gave rise to considerable discussion, and led up to a long talk by M. W. Franklin on the use of ozone for water purification.

George D. Smith presented a written discussion by H. W. Hillman on the "Development of the Electric-Vehicle Business." The successful practice of central stations in Baltimore and Hartford, Conn., were suggested as guides to other central stations for developing this form of business.

The final commercial paper, "Means of Developing and Diversifying the Present Load," was presented by H. E. Armstrong, of the Tri-State Railway and Electric Co. It proved to be largely a description of the remarkable growth of central station business in Steubenville, Ohio.

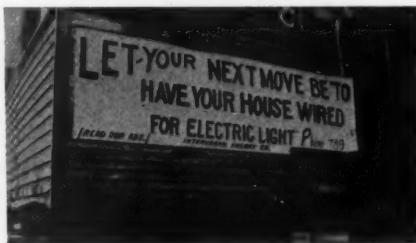
The annual banquet of the Association, and a variety of entertainment, including a rejuvenation of the Jovians, added spice to the more serious business of the Convention. The secretary's report showed a goodly balance in the treasury. One suggestion made was that the annual dues, which have not been changed for eighteen years, should be increased, since they now were out of proportion to the benefits received from the Association. The exhibition hall showed up to standard both in number and quality of the exhibits.

Officers for the ensuing year were elected as follows: President, J. C. Martin, Wilmington; Vice-President, C. V. Hard, Wooster; Secretary-Treasurer, D. L. Gaskill, Greenville; Executive Committee, W. C. Anderson, E. W. Lathrop, W. Parsons, W. R. W. Griffin, Robert Lindsay; Advisory Committee, F. M. Tait, H. L. Montgomery, W. J. Rose.



Two "Moving" Electric Arguments

A clever plan to make advertising capital of an old building that was being moved along the street, recently was put into execution by the Bartlesville (Okla.) Interurban Railway Company. A huge sign was affixed to the face of the building, reading



The Bartlesville Co. made timely capital of this accidental advertising opportunity.

in large capitals: "Let your next move be to have your house wired for electric light." The name of the company and its telephone number were included. A second sign on the opposite side of the building read: "An electric sign will make your business move."

The timeliness and peculiarly penetrating quality of such advertising is readily apparent.

H. G. D. Nutting

H. G. D. Nutting, formerly manager at Fort Atkinson, Wis., and for a time on the staff of the Wisconsin Public Service Commission, has resigned his position as district manager for the Central Illinois Public Service Company.



Ozonators for the Movies

By W. T. EDMONDSON,

Alliance Electric & Pwr. Co., Alliance, Ohio

We have considerable of a foreign population in our community and it was found that something had to be done to overcome the odors resultant in the gathering of so many of "the Great Unwashed" at the moving picture theatres. The more fastidious people were being driven away. They liked the "movies," but not the attendant smells. We installed ozonators in all the moving picture houses in Alliance, with the result that they are now rendered free from all objectionable odors, even in their most crowded moments on a hot night.

Roy V. Wensley

Roy V. Wensley has been appointed superintendent of the People's Light & Heat Company of Indianapolis, Ind. Mr. Wensley formerly was connected with the Merchants' Heat & Light Company of Indianapolis.

J. H. Bissell

J. H. Bissell has been appointed treasurer of the Mississippi River Power Company at Keokuk, Ia. Mr. Bissell recently was assistant treasurer of the Paducah (Ky.) Traction Company and the Paducah Power & Light Company, and F. B. Flahive of Dallas, Texas, now succeeds him in these positions.

F. H. Tidnam

F. H. Tidnam has succeeded H. H. Stephens as manager of the El Reno (Okla.) Gas & Electric Company. Mr. Tidnam was formerly general manager of the Oklahoma Gas and Electric Company of Oklahoma City.

F. J. Derge

F. J. Derge is now manager of light, heat and power for the Toledo (Ohio) Railways and Light Company. Mr. Derge lately was a member of the New York Staff of H. L. Doherty & Company.

Electric Blower for Disinfecting Books

A clever plan for disinfecting books in public libraries by means of the electric blower has been devised in Los Angeles. The books are placed on a revolving rack against which small motor-driven blowers project jets of air laden with disinfectant which has been dropped into the air chamber. The current not only keeps the whole rack revolving, but also spreads out the leaves so that the air can get at them and the disinfectant be finely distributed throughout each volume.

Wallace Heads Sign Club

A new and informal organization to be known as the Electric Sign Club held a meeting in the Hotel Congress on Wednesday, June 4. W. S. Wallace of Rochester was elected Chairman. The objects of the Sign Club are to assist in securing better sign ordinances; to encourage the erection of more artistic signs with view to anticipating the criticism of civic improvement societies, and the exchange of experience, advertising material and data on electric signs. A cooperative sign book, somewhat like that issued several years ago by the Commercial Section, was discussed, but no definite action taken.



The Wise Appliance Policy

YOU sell current: the public buys service. Anything that will tend to make the service more desirable, more satisfactory, more nearly indispensable, will automatically increase both the number of your customers and the profit from each customer.

"The Wise Appliance Policy" is a new and successful method of selling appliances on a service basis. It shows how to take advantage of the new "efficiency idea" that the domestic science experts are preaching, and how you can install complete equipments of electric household utilities in the majority of moderately-well-to-do homes in your territory. May we explain in detail?

The Wise-Harrold Electric Company,

Sales Office, 17 Madison Ave., New York City
Factories, New Philadelphia, Ohio



Create a Desirable Business for

THERE is no more profitable field to exploit than that involved in the lighting of mills, factories and workshops. A surprisingly small percentage of industrial plants are adequately lighted after dark. The profits of most manufacturers actually fall off with the coming of night due to the lack of sufficient illumination for enabling their workmen to maintain a high working efficiency.

How about the manufacturing concerns in your neighborhood?

Just now is as good a time as any to put the lighting question squarely before plant owners and managers. The complete success of the National Quality Mazda lamps already installed in hundreds of factories is a convincing argument you can use.

A Kansas City agent circularized a list of poorly lighted industrial plants

NATIONAL QUALITY  **LAMP DIVISION**

OF GENERAL ELECTRIC CO

Cleveland
SIXTH CITY



"DO IT ELECTRICALLY"

American Electric Lamp Works,
Central Falls, R. I.

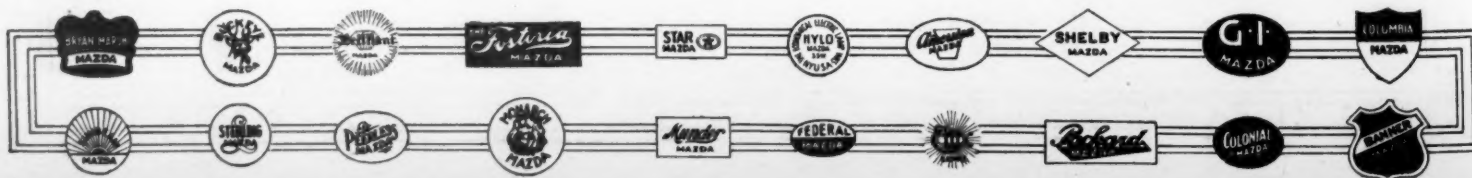
Banner Electric Works,
Youngstown, Ohio

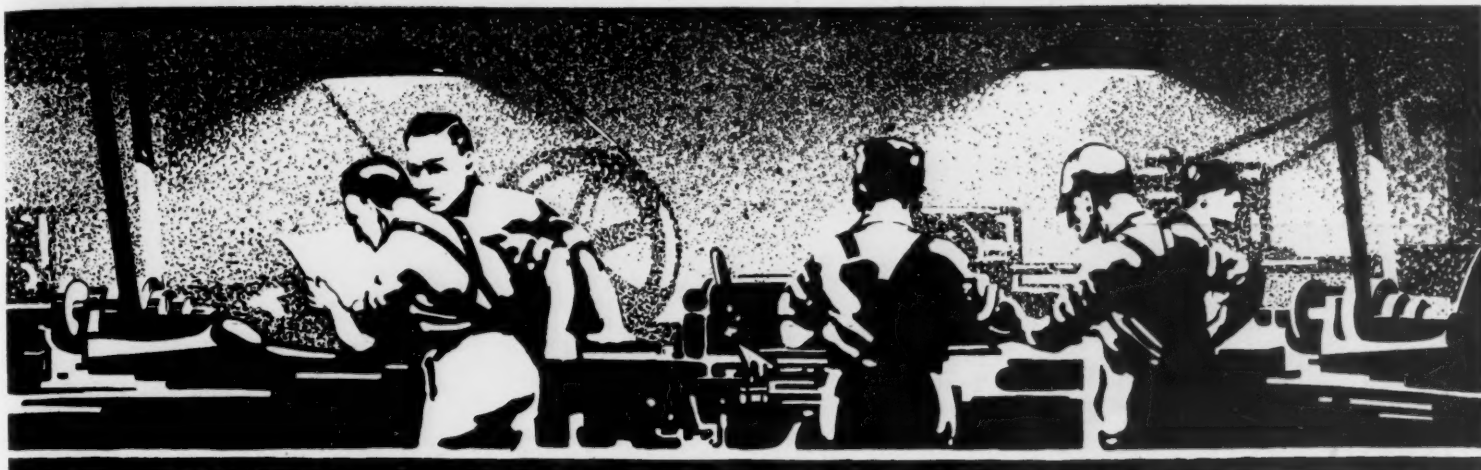
Brilliant Electric Works,
Cleveland, Ohio

Bryan-Marsh Electric Works,
Central Falls, R. I.
Chicago, Ill.

The Buckeye Electric Works,
Cleveland, Ohio
Colonial Electric Works,
Warren, Ohio
The Columbia Inc. Lamp Works,
St. Louis, Mo.

Economical Electric Lamp Works,
New York City
Elux Miniature Lamp Works,
New York City
Federal Miniature Lamp Works,
Chicago, Ill.





e Industrial Lighting for Yourself

with very gratifying results. By subsequently calling on these prospects seventy per cent of the visits brought in business.

You can do equally well. From such sources as the Business Directory, salesmen's reports and telephone books make up a prospect list. Mail out follow-up letters, cards and other advertising material. You will be pleased with what you can accomplish in this way. Incidentally, we will furnish our agents, free of charge, with a series of sales-producing letters.

Or, call up by phone a number of the smaller manufacturers in your city. Explain your proposition to them. Show them how you can improve the working conditions in their shops.

Our Engineering and Advertising Departments are ready at all times to help our agents in obtaining this very desirable class of business. Send in your request to any of the member works comprising the

NATIONAL QUALITY LAMP DIVISION

OF GENERAL ELECTRIC CO

Cleveland
Sixth City

The Fostoria Inc. Lamp Works,
Fostoria, Ohio
General Inc. Lamp Works,
Cleveland, Ohio
Monarch Inc. Lamp Works,
Chicago, Ill.

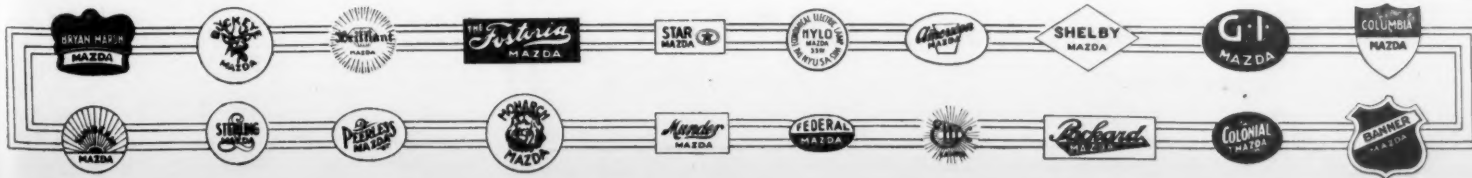
Munder Electric Works,
Central Falls, R. I.
Packard Lamp Works,
Warren, Ohio
The Peerless Lamp Works,
Warren, Ohio

Shelby Lamp Works,
Shelby, Ohio
Standard Electric Works,
Warren, Ohio

The Sterling Electric Lamp Works,
Warren, Ohio
Sunbeam Incandescent Lamp Works,
Chicago, Ill.
New York City



"DO IT ELECTRICALLY"



New Greenwood Method of Electrical Advertising

The Greenwood Advertising Company, of Los Angeles, Cal., has applied for a patent, under the name of Tucker-Leech, to cover a new invention made at the Greenwood factory by one of its expert designers, A. B.



A new Greenwood Sign development makes this perfect electric likeness of Washington possible.

Leech. The patent comprises a number of claims, such as producing pictorial effect by showing parts of surface in the shadow, while other parts are outlined. Another object of the invention is to provide for shifting

the shadow so as to change the aspect or the pictorial effect of the sign; also to produce the effect of lines or relatively narrow dark spaces in a pictorial effect on a sign; to provide for increasing the thickness of such lines at any point desired, also for modulating or varying the degree of intensity of the shadow. The patent applied for further embraces any number of claims among these lines.

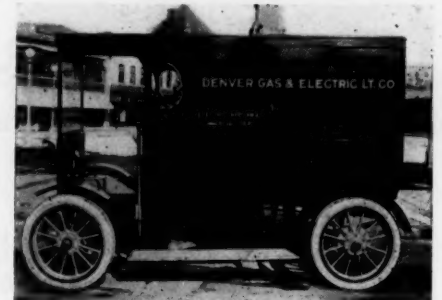
The illuminated picture of Washington on this page clearly shows a leading purpose of the invention—to bring out night halftone effects by means of perforated walls in connection with light. It evidences that the Tucker-Leech process may reproduce an electrical likeness or character cartoon of any person, clearly portraying the changing expression of the features. The Washington face, which is only three feet wide by four feet six inches high, shows that the new process can clearly bring out features in faces, or other designs, small as well as large.

The Greenwood attorneys have called the new invention the "Electric Moving Picture Sign." This title is particularly appropriate as the Greenwood Company has been working for electrical advertising rather than for electric signs simply as such, and believe that these features, under the skillful and enthusiastic guidance of Mr. Leech, are reaching that stage. For example, the Greenwood Company is preparing a series of electrical designs for dentists, showing four changes—a pleasant face, a frown, the tooth out, the tooth in with a crown on, and the face smiling. Similar methods are being worked out showing the evolution of the ring, a wedding and other ideas that should be of real advertising value. Trade marks of different manufacturers also can be featured in this way, and when figures

are used, such as the "Gold Dust Twins," or the Kellogg figure, they can be made to do all sorts of stunts by means of the new invention. The idea also has strong possibilities for political campaigns and conventions of every nature.

Selling Appliances by the Load

The picture shows the appliance-delivery wagon which the Denver Gas & Electric Light Company used in a recent house-to-house campaign. The demonstration lasted three weeks and 434 morning calls were made. A thorough demonstration of various household appliances was made at each house, with the result that 130 appliances, mostly irons, toasters and percolators, were sold in the territory covered by the delivery wagon. The vehicle made itself further useful, during the campaign, by delivering,



Extensive ground-covering by this truck was a large factor in the success of the recent house-to-house appliance campaign in Denver.

in the afternoons, 227 appliances that were sold in the office. The truck covered a total distance of 568 miles and consumed 1,568 kw. Thus, the Denver Company not only made a practical demonstration of its belief that the central station should carry electric trucks as part of its equipment, but proved, that once installed, the vehicle could be used for something more than mere advertising purposes. The company name and the words, "Electric Appliances, Commercial Department," were displayed across the upper body of the truck and added greatly to the effectiveness of the idea.

Louisville Utilities Merger

The Louisville Gas & Electric Company purchased all of the stock of the Kentucky Electric Company on July 10, thereby completing the Louisville utilities merger, the other companies in the combination being the Louisville Gas Company, the Louisville Lighting Company, the Kentucky Heating Company, the Kentucky Electric Company, the George C. Fetter Lighting Company, and the Campbell Electric Company.

Officers have been elected as follows:—President, General George H. Harries; Vice-president, Donald MacDonald; Secretary, R. J. Graf; Treasurer, T. B. Wilson; Directors, H. H. Byllesby, Chairman; O. E. Osthoff, Arthur S. Huey, J. J. O'Brien, all of Chicago; General G. H. Harries, James B. Brown, Donald MacDonald, C. J. Doherty, Dr. H. D. Rodman, Judge Matthew O'Doherty, D. E. Doherty, Col. John H. Whallen, Harry W. Fuller, John W. Barr, all of Louisville; R. H. Trimble of Mt. Sterling. Donald MacDonald will be general manager of the company, and H. L. Harries assistant general manager.

Stockholders in the new company have authorized the issuance of \$7,500,000 in five-year 6 per cent bonds, all of which have been sold. The controlling interest in the new company is held by the Standard Gas & Electric Company, one of the Byllesby interests. The property will be under the management and operation of H. H. Byllesby & Co.

What We Did In SCRANTON, PA.

We Can Do For You—In Proportion

We put our men into the territory of the Scranton Electric Company on March 15, 1911. In two years, we connected 2222 small homes and stores.

These 2222 customers *could not have been secured* without a flat rate controlled by the Excess Indicator.

Moreover, throughout this period we worked, gains in meter accounts have increased more than normal.

In your city hundreds of similar small homes and stores are now beyond your reach. We can make them profitable customers for you—just as we did in Scranton.

Let us give you the figures—the evidence—the signed statements of the Scranton Electric Company officials.

EXCESS INDICATOR COMPANY

Westinghouse Bldg.

-

-

Pittsburgh, Pa.

Don't Argue---Demonstrate



In talking industrial lighting to a hard-shelled manufacturer, a five-minute demonstration beats an hour's conversation. The Bryan-Marsh agent or central-station can show facts, figures and photographs of completed installations. They can prove that

Bryan-Marsh Mazda Lamps

are in successful operation under the most adverse service conditions; that the Bryan-Marsh industrial lighting experts have the most and the biggest industrial installations to their credit.

BRYAN-MARSH ELECTRIC WORKS

Of General Electric Company

CHICAGO, ILLINOIS



Philip Dodd Resigns

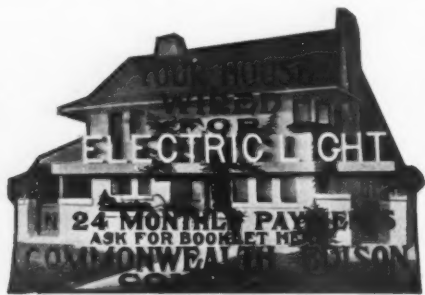
Philip S. Dodd resigned from his position as Secretary-Treasurer of the Society for Electrical Development on August 1, in accordance with an understanding made at the time he took the office. No announcement of Mr. Dodd's future is made at this time, although it is understood that he will leave the electrical industry.

Philip Dodd is among the best known men in the electrical field. He first attracted attention through his work on the Electrical Review, of which paper he subsequently became business manager. From the publishing business he went to the National Electric Lamp Association as director of its department of publicity. Here his work in furthering the cooperative ideas of J. Robert Crouse proved so successful that he was unanimously selected as the junior executive officer of the Society for Electrical Development.

The electrical industry loses a good man with his retirement. Mr. Dodd's enthusiasm and stick-to-it-iveness won him a prominent place and his abilities in advertising and in organization work are recognized as exceptional. A host of personal friends in the industry and hundreds to whom he was known only by reputation or correspondence will regret his leaving and wish him every success in his new work.

Commonwealth Edison Ad for Drug Store Windows

The picture here shown reproduces an advertisement which the Commonwealth Edison Company of Chicago is placing in the windows of drug stores throughout the city. This form of advertising holds with the Edison Company's plan to cooperate with



This effective advertising device, with center line of lighted miniature letters, is placed in the windows of the Commonwealth Edison drug store agencies

its drug store agencies by supplying free current for signs and rendering them other valuable aids. The advertisement is in the nature of a miniature house, the windows of which are lighted from behind. The lettered message across the face of the building reads:

"Your House Wired for Electric Light in 24 Monthly Payments. Ask for Booklet Here. Commonwealth Edison Company."

The letters, "Electric Light," which form the center line of the word display, are illuminated, following out the Federal miniature letter idea.

The Chicago plan of cooperating with the local drug stores is excellent in that it results in a number of company agencies of an unusually high-class character. The advertisement, described above, is also an effective way both to advertise Edison current and to bring to sharper public focus the close and cordial relationship between company and agency.

Chicago the Choice for Electric Vehicle Convention

The next convention of the Electric Vehicle Association of America will be held in

Chicago, October 27 and 28. A convention committee has been appointed, with Homer E. Niesz of the Cosmopolitan Electric Company of Chicago, as its chairman. Three sessions will be arranged for the two days, the morning of the first day to be given over to registration. An attractive and valuable program of papers will be prepared, and the Committee on Papers invite suggestions as to what subjects might well be discussed, and the men who should prepare them. The Secretary's office will compile the Con-

vention mailing list, and will send out the Convention circulars and papers. A large attendance is expected at the Convention, and discussion of much value to the Association and its work should be brought out.

W. B. Miser

W. B. Miser, formerly of the Chicago district office of the Westinghouse Electric & Manufacturing Company, has been appointed manager of the Jacksonville (Ill.) Railway and Light Company.

OUTDOOR ADVERTISING EVERYWHERE

The O.J. Gude Co., N.Y.

Originators of Spectacular Electric Sign Advertising, and of the "Great White Way," New York City

Owners of Electric Moving Sign U. S. Patent No. 648,677

The Flasher is the Heart of the Sign

A sign without a flasher is a sign without life. Don't erect **dead** signs in **your** town.



Reco Sign Flashers
Standard types and special designs. Many exclusive features of superiority.

Put a flasher--a **good** flasher--a Reco Flasher--on every sign and your streets will palpitate with life and motion.

Put Reco Lamp Hoods on every sign and every sign will be beautiful with gorgeous color.



Reco Lamp Hoods
Natural colored glass. All sizes, all colors. Stay on, securely held.

REYNOLDS
ELECTRIC FLASHER MFG. CO.

Largest Manufacturers of Flashers in the World.

Also Manufacturers of Billboard Reflectors, Transformers, Time Clocks, Window Displays, Etc.

617-631 W. Jackson Blvd., Chicago

1123 Broadway, New York



In Every Industry=For Every Service

Holophane-D'Olier Steel Reflectors have been installed in more than 1000 *large* industrial plants within the past six months. From mouse-trap shops to ship yards, in every kind of mill and factory, Holophane-D'Olier equipment has been adapted perfectly to *every* type of work.

This is because the Holophane-D'Olier line is complete—because it contains “a reflector for every service.” There are altogether 768 different Holophane-D'Olier lighting combinations now at the disposal of the industrial lighting expert, each specially designed to meet a specific requirement.

All these units are described in Holophane Bulletin No. 30. It is a practical necessity to those engaged in industrial lighting work. A copy free.

HOLOPHANE WORKS

OF GENERAL ELECTRIC COMPANY
CLEVELAND, OHIO

New York

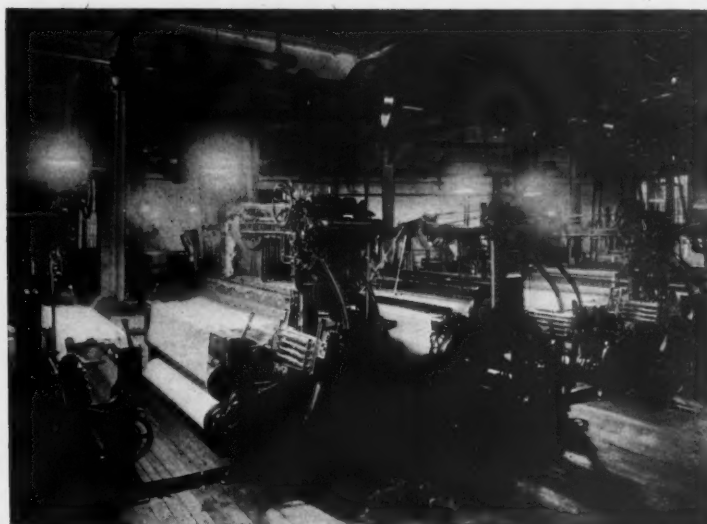
Boston

Philadelphia

Chicago

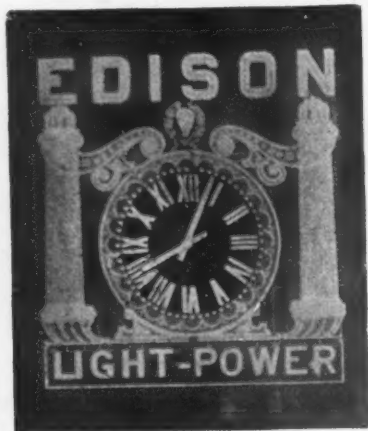
San Francisco

Holophane Company Limited, Toronto, Canada



"Do It Electrically"
BETTS ELECTRIC
"KLOKS"

Should Be Installed Everywhere



The Largest Electric Clock in the World

New Business Managers

be on the alert for new clock installations. Let us figure on an Electric "Klok." They Use Current. Others do not.

Simple—Inexpensive—Accurate—Reliable

Install one of our "BABY DIAL KLOKS." This mechanism will operate a clock up to eight feet in diameter. Price only \$95.00 net.

All sizes up to 40 feet.

We also have an attractive "Klok" Monogram proposition for Moving Picture Houses. "HELP THE GAME ALONG"

National Contractors' Convention

A Fruitful Gathering of the Clans at Chattanooga, Tenn.

The thirteenth annual convention of the National Electrical Contractors' Association was held in the Hotel Patten, Chattanooga, Tenn., July 16 to 19, inclusive. The total registered attendance was 214. A number of special entertainment features occupied the time of the delegates while en route, and these were supplemented by many local features.

Two of the important addresses of the occasion were those by P. L. Miles of the National Quality Lamp Division of the General Electric Company on "Advertising and Its Benefits in the Electrical Contracting Business," and W. E. Robertson of the Robertson-Cataract Company of Buffalo, N. Y., whose paper defined the respective fields of the jobber, dealer and the contractor showing that the tendency is towards larger and fewer jobbing houses; more dealers—they to come from the ranks of the jobbers and contractors—and better and more responsible contractors. The speaker urged cooperation among the three branches, and better appreciation by each of the definite and respective fields of the others.

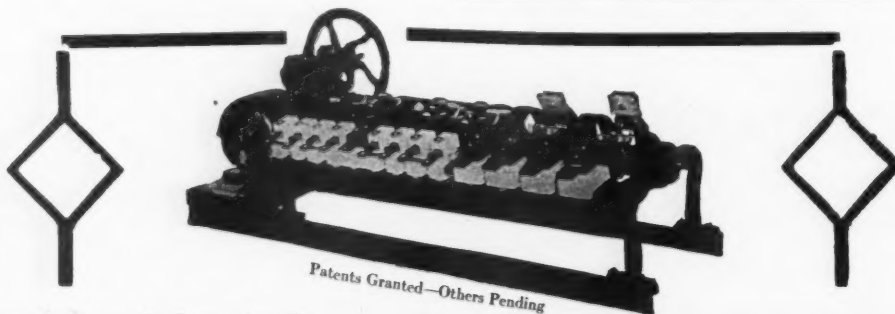
"Guaranteed Wiring" was another important subject to be brought up during the Convention. Under this head, a plan was proposed that every member of the Association should undertake to carry out interior wiring contracts in strict conformity to the rules in force, the Association to stand back of the guarantee by agreeing to indemnify the employer of any of its members against bad workmanship or materials, and that any member failing to remedy defective work after being notified by the Association to do so should be dropped from the organization. The plan was referred to the

executive committee of the Association with instructions to investigate the proposal at length and to report its findings at a later meeting. J. M. Wakeman, general manager of the Society for Electrical Development, Inc., also talked on the scope and aims of that organization. He showed what the Society was doing to bring about better conditions both for the contractors and the consumers. The evil wrought by the policy of architects of making a general contract to cover all work so that the successful general contractor in sub-contracting the electrical work used one contractor against another to the detriment of the trade, was attacked at the Convention. The consensus of opinion was that segregation of contracts should be suggested to the American Institute of Architects. "Cost Keeping for Contractors" was another important theme of this Convention.

The following officers were elected for the ensuing year: President, Ernest Freeman of Chicago; First Vice-President, J. C. Hatzel of New York; Second Vice-President, W. L. Hutchinson of Kansas City; Third Vice-President, J. C. Rendler of Los Angeles; Treasurer, J. R. Galloway of Washington; Sergeant-at-Arms, J. C. Sterns of Buffalo. W. H. Morton resigned the secretaryship during the first day of the Convention, his resignation to become effective September 1. He was reelected secretary with the understanding that the executive committee should fill the position before the above date. The treasurer's report revealed that the Association never was in better financial condition.

Municipal Electric Housekeeping School

The Boston Board of Education has opened a school of practical arts in which instruction in the use of electrical apparatus and household appliances will be emphasized. A house adjoining the new school is being remodeled and equipped for the course which is happily termed "electrical homemaking." Modern appliances will be found in the basement, laundry, kitchen, dining room, living rooms, and bed rooms of the house. Thus, the girls will be instructed in the use of electric washing machines, smoothing irons, driers, wringers, electric stoves, culinary devices, ozonators, vacuum cleaners, fans, water heaters, toilet articles, and motors for operating sewing machines, grinders, buffers, sharpeners and other power appliances. The Boston Board of Education clearly sees that the housekeeper of the future will be an even larger consumer of domestic light, power and heat than the present one, and is definitely preparing to give many Boston schoolgirls much needed electrical education. Looking at the matter from the commercial standpoint, the near-future salesman of current and household appliances in Boston is going to have all the best of the bargain. However, there is a little something in this educational plan for the present-day fellow, too. As the girls bring their newly-acquired electrical ideas back from the schoolrooms to their parents, the homes of these girls should, on the whole, turn out to be pretty good prospects. Possibly it would do no harm for electrical salesmen, who cover Boston territory, to get hold of the school list, and by means of it, work their way into the homes of the pupils and show the parents how the electrical education acquired in school could quickly be turned to practical advantage in the home. The parents should be in a receptive mood and open to electrical education, themselves.



Patents Granted—Others Pending

BETTS FLASHERS ARE THE STANDARD OF EXCELLENCE

Our KILARK PICUP Block (patented) "kills" the disastrous arc at the "make," lengthening life of brushes and contacts. KILARK FLIPOFF (patented) practically eliminates arc at the "break," handling enormous loads with slight perceptible burning.

AUGUST 1, 1913

"CURRENT EVENTS"

No. 14

Every Important Flasher Improvement, within the last three years, we developed. The Patent Office confirms this. That explains why we make more Flashers than any other concern.

BUY RESULTS—NOT TROUBLE



Style A
Pat. 1905

COLOR CAPS. "SNAP ON"

Made of Natural Colored Glass—All Colors. Won't fade or "kill" the light.

BETTS & BETTS

Largest Manufacturers of Sign Accessories in the World.

254 West 55th Street, New York, U. S. A.



Style B
Pat. 1912

We Prepare the Proposition —You Present It



Co-operation and Specialization; that is the secret of the success of our Illumination Department.

Columbia Agents and Central Stations receive, without cost, the most expert service in planning lighting installations---in solving illumination problems.

That leaves them free to do the more profitable work of selling the lamps that bear this label.



Columbia Incandescent Lamp Works
of General Electric Company

6th and Locust Streets
St. Louis, Mo.

The Rochester Sign Success an Object-Lesson for New-Business Managers

By JAMES H. BETTS,
Sales Manager, Betts & Betts, New York, N. Y.

Rochester (N. Y.) is a successful electric sign city, one of the leaders, in fact, in electric sign advertising. Recently, I had the pleasure of meeting the man who has made it so, W. R. Wallace, New-Business Manager of the Rochester Railway and Light Company. Mr. Wallace has made a success of the sign proposition, because he has the cooperation of a central station, which realizes the value of advertising electrically and appreciates the income from this source; and, further, because he has carefully studied every phase of the matter and adopted a follow-up system that I frankly think cannot be surpassed anywhere.

This system has gained for the Rochester Company the confidence of the merchants in Rochester. They not only know that the sign they buy will be built by a reliable sign manufacturer and that it surely will be appropriate to their business, but, most important of all, they know that the central station's interest does not cease with the sale. That sign is going to be looked after as long as it is up.

That is Mr. Wallace's system of follow-up. Every electric sign in Rochester is inspected once a week, and a report made as to its condition. This report is entitled, "Sign Inspections," with the date of inspection in the headline. It is simply a list of electric sign users in Rochester, their addresses, and the story of the exact condition of each sign tersely told in a single phrase alongside the consumer's name. Two quotations from a recent inspection report will suffice to make this part of the system clear: "Sign not burning;" "10 lamps not burning, lamps dirty, 1 lamp not burning, 30 and 50 watt lamps are mixed."

After the report has been filed by the inspector, a postal card (figure "a" on this page), describing the condition of his sign, is sent to every owner of a sign not marked o. k., the notice closing with a courteous proffer of central station assistance in the matter. Figure "b" on this page is a follow-up for the first card, which goes a step further in reminding the consumer of the advertising value of a well-maintained sign, and screws in a little more deeply the company proffer of assistance in restoring the sign to perfect condition. It is an interesting commentary on the success of the

Gentlemen:

Our inspector reports that there were
lamps out in your (Electric Sign
(Outlining

Thinking possibly that this matter has
ESCAPED your observation we take the liberty
of calling it to your attention. If there is
anything we can do to assist you kindly let
us know.

Yours very truly,

ROCHESTER RAILWAY & LIGHT CO.

Figure "a". The Rochester central station sends
this postal to every customer whose sign report
is not marked O. K.

Rochester Company's plan that its officials have received many letters from customers, indicating their great appreciation of the company's efforts to make its electric sign advertising valuable.

The Rochester sign success, above outlined, is only a reminder that every new-business manager, who has made a success of a sign campaign, has had to adopt a system. When I organized our "Flasher Service" department, I was convinced that

we could impress upon every live sign manufacturer the necessity of a system of co-operation with the customer, the central station and the flasher manufacturer. In the same analogy, new business managers should emphasize to their prospective sign customers that they are selling permanent advertising, see that they get it, and stand by them as long as they keep their electric signs in commission. They should work only with the sign manufacturers who will

Gentlemen:-

Sign
Our inspector reports that your Outlining
was not burning.
Thinking that it is not your desire to have
such a valuable method of advertising out of
service we take the liberty of calling this
matter to your attention.
Should there be any service that we can
render to assist you in any way we will be
pleased to do so, if you will kindly notify us.
Yours very truly,

ROCHESTER RAILWAY AND LIGHT CO.

Figure "b". Follow-up card to figure "a." Em-
phasizes the Rochester company's willing-
ness to assist.

coincide with such views, sign manufacturers who will furnish the highest class of work and reliable flashing mechanism.

It has been my observation that many new-business managers, believing that they were working in the interests of their customers, have been too insistent upon low-priced signs, too much competition, and the like. I believe that with few exceptions, this practice will always prove a mistake. If the reliable sign manufacturer cannot get the business at a price that will allow a legitimate profit and permit him to build the sign well, he will not accept the business. The man who takes it at a loss, must "cut corners" to make a profit, or go out of business. It is usually the former. Hence, it is vitally important that new-business managers should turn their backs on such practice, and build up their system around the ultimately surer and more profitable factors of well-built signs suited exactly to the requirements of the merchant's business; the right selling methods, and, most important of all, follow-up service that really works in practice. Finally, if new business managers will adopt the Jovian slogan, "Cooperation," in their sign campaign, as well as in other lines of the industry, they can double the sign load on their lines in one year.

New Tungsten Price Reductions

New price schedules, covering tungsten-filament incandescent lamps, became effective July 1. A reduction of 12.5 per cent in the list prices of tungsten lamps in standard package quantities is therefore now in force. A comparison of old and new prices follows:

TUNGSTEN LAMP PRICES

Package, Quantity	Rating, Watts	Old Prices Plain	(List) Frosted	New Prices Plain	(List) Frosted
100	10	40	43	35	38
100	15	40	43	35	38
100	20	40	43	35	38
100	25	40	43	35	38
100	40	45	49	35	38
100	60	45	49
24	100	90	97	80	87
24	150	1.35	1.45	1.20	1.30
12	250	2.25	2.40	2.00	2.15
8	400	4.15	4.40	3.65	3.90
8	500	4.55	4.85	4.00	4.30

C. H. Howell

C. H. Howell has added to his duties as contract agent of the Coshocton Light and Heating Company the vice-presidency and managership of the County Electric Company of New Philadelphia and Canal Dover, the Twin City Traction Company of Dennison, and the New Midland Power and Traction Company of Cambridge, Ohio.

Big Electric Show for New York

The New York Electrical Exposition will be held in the new Grand Central Palace, New York City, from October 15 to October 25, inclusive, and will include an automobile or motor show. The latest industrial electrical apparatus, therapeutic devices, electric vehicles, safety equipment, applications of electricity in agriculturing, central-station and national government exhibits, and a reproduction of the display made by Thomas A. Edison at the Paris Exposition of 1889, will be some of the leading features.

Lighting Up the Doctor's Red Cross Sign

The red cross sign, placed in a conspicuous place on front, is all the emergency doctor needs to show to gain the right of way for his automobile by day. However, this method is not always infallible for the reason that the red cross sign is often invisible by night. One doctor has solved this complication for himself by inventing a metal and glass sign illuminated in its interior by means of a small electric light connected with a storage battery circuit.

If you could bank on
nothing else but their
Sterling Quality and
prestige

Sterling Lamps

would be mighty good
business for you to
handle.

But we offer you the
added benefit of a co-
operative profit-guar-
anteeing Selling Plan
that makes the Bigness
and Permanency of
your Sterling Market
doubly assured.

Look into this propo-
sition NOW.

Sterling Electric Lamp Works

of
General Electric Company
Warren, Ohio

Two New Reynolds Products

A recent product of the Reynolds Electric Flasher Manufacturing Company of Chicago and New York is a practical, low-priced one-day time switch. This device is built with a weather-proof case and is designed for either indoor or outdoor installation. The clock and switch mechanisms are of approved and reliable types, while the tripping arrangement is simple, yet effective. The weather-proof switch cabinet permits of easy access to the winding levers, the switch set and the wiring.

The device is suitable for turning off electric signs, show window, store or hall, apartment house or isolated street lights, or for patrol alarm systems.

New Idea on Appliance Sales

"The Wise Appliance Policy" is the title of a book just issued in which a new and very successful plan of selling electrical appliances is described and demonstrated.

It is published by the Wise-Harold Electric Company of New Philadelphia, Ohio, manufacturers of the Simplicity Suction Sweep-Clean. The Wise Appliance policy takes advantage of the modern tendency of domestic science teachers who are applying the efficiency idea to housekeeping. It points out to central station men their opportunity to make electric science the very backbone of efficiency in housework by installing groups of motor-driven and electrically-heated appliances under conditions which will completely electrify the household routine.

The plan has been tried out with great success, notably by the Denver Gas and Electric Light Company of Denver, Colorado in which city several hundred groups were installed notwithstanding the fact that Denver is already close to the "point of saturation" as regards the sale of electric household devices.

The booklet, which is from the pen of Frank B. Rae, Jr., is not being sent out broadcast but will be supplied only to central station men who request it.

Betts Electric Dial "Kloks"

In 1912, Betts & Betts of New York City developed a novel style of clock that was strictly an electrically operated mechanism. Their first large installation was for the Edison Electric Illuminating Company of Boston, Mass. The dial on this clock was thirty-four feet in diameter, and it is the largest electric clock in the world. Betts clocks are very novel in effect in that they consist of a master clock which can be set at any distance from the secondary clock, which is operated by an electric motor. Yet, the secondary clock keeps in perfect step with the master clock, a fact which testifies to the peculiar efficacy of the device. The action is positive, while the mechanism is very simple both in principle, construction and mode of operation, hence inexpensive. Betts & Betts also make a special self-winding compensated master clock, which they furnish on the larger installations where time accuracy is necessary.

Betts "Kloks" are now being built to the new Gordon Theater in Boston, the Nugent Department Store in St. Louis, the City of Sydney, Australia, and for other installations throughout the country. The main appeal in these devices for new-business managers is the fact that they are good current consumers. They represent the modern way of telling time; they are accurate, durable, comparatively cheap to buy and easy to sell. Numerals on the dial and the hands of the

clock are illuminated, making an attractive electric display, and incidentally increasing the market for current.

Electric Heat-Storing Stove

An electric stove is now on the market that offers a valuable economy in heat-storage and consequent low-current consumption. The apparatus comprises a block of iron imbedded in heat-insulating material. Within this block is an electrical heating unit. The surface of the iron block forms a smooth plate on which a cooking utensil may be placed. When the stove is not in use, the lid which covers it is also filled with heat-insulating material. As there is practically no heat generated by the heating unit, the iron block is steadily heated and rises in temperature until a cooking utensil is substituted for the cover. After one dish has been cooked, the lid is returned to the stove, and stores heat until the next dish is ready for cooking. Although this electric stove uses very little current, it has this specific value for the central station: it requires a low rate of current either continuously or during off-peak hours.

Quillin-Jenson

Miss Harriet Jenson, a prominent society girl of Pueblo, Colorado, and W. E. Quillin, assistant commercial manager of H. L. Doherty & Co. of New York, were married at the Antlers Hotel, Colorado Springs, June 29.

This romance both in cause and effect was typical of the quick-size-up, close-in and get-there methods of this young "live wire" of the electrical industry, as the happy couple met for the first time less than a year ago. Mr. and Mrs. Quillin will reside in New York.

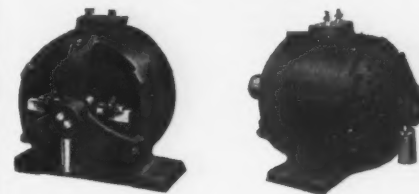
B. J. Fernald

B. J. Fernald has resigned from the Pittsburgh office of the General Electric Company to become sales manager for the Best Manufacturing Company of Pittsburgh.

John L. Fay

John L. Fay, formerly associated with W. N. Matthews & Brother as sales engineer, is now superintendent of distribution for the Union Electric Light & Power Company of St. Louis, Mo.

Peerless Fractional Horse-Power Motors



Open wide the door to Central Station opportunity.

They sell on sight because their superior design and construction make them the best for every small-motor requirement, both A. C. and D. C., of office, store or shop.

The Peerless Electric Co.
Warren, Ohio

Agencies in All Principal Cities

Help Out Your Day Load with the THOR ELECTRIC

Home Laundry Machine

Over 60,000 in satisfactory use

August is a month of hot days and extra-heavy housework for your home-from-vacation customers.

Sell them a "Thor"—Its wonderful power of work and time saving will teach them the value of current-consuming household devices and quickly lead to other appliance installations.

The "Thor" stays sold. Your customers will use it every wash-day. Washes clothes spotlessly clean; saves 60% of the wear on clothes and a heap of the housewife's time and strength.

We COOPERATE with you by placing a "Thor" in the home of any responsible party for

15 DAYS FREE TRIAL

to be returned to us if not perfectly satisfactory. We also offer you most valuable co-operative selling help.

Write for full particulars, NOW.



Equipped with two-roll reversible wringer

HURLEY MACHINE COMPANY

CHICAGO, 520 West Monroe St.

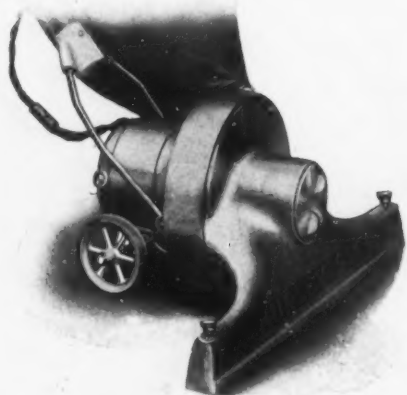
LOS ANGELES, 3rd and Main Sts.

NEW YORK, 1010 Flatiron Building

SAN FRANCISCO, 523 Mission St.

Hurley Electric Vacuum Cleaners

Hurley Electric Vacuum Cleaners, manufactured by the Hurley Machine Company of Chicago and New York, are known, respectively, as the Hurley "Six" and the Hurley "Four." They are modern and efficient types of the vacuum cleaner; simply



constructed, durable, light, moderately priced, and very easy to operate, and having a number of valuable special features. Every Hurley machine is shipped complete with electric cord, switch, etc., mounted in the handle and fully guaranteed against all mechanical and electrical defects.

Automatic Package Tier

The automatic package tier is a new time and labor-saving device, which automatically ties mail matter into packages, and has a number of other applications. It takes bundles of from twenty-five to fifty letters, and in two and one-half seconds time binds them into a neat, compact package and



Electrically Driven Package Tier

drops them into the mail bag or other receptacle. The United States Post Office is one user of this device, it being particularly adaptable where a good deal of mail matter is handled. The device is made by the Automatic Package Tier of Chicago, and is operated by a $\frac{1}{8}$ hp. Westinghouse Small Motor, which takes current from the lighting circuit.

Meeting of New York Electrical Society

The visiting meeting of the New York Electrical Society, recently held at the Woolworth Building, New York City, brought out an attendance of 275 members. The electrical installation and elevator equipment of the building were inspected. At the annual business meeting of the Society, which was held in connection with the visiting meeting, the following officers were elected:—President, H. H. Barnes, Jr., vice-presidents, S. S. Edmands, A. H. Lawton, Carl Schwartz; secretary, George H. Guy; treasurer, H. J. Hoeltge. A number of interesting papers were read.

New York Sales Offices for Bridgeport Concerns

The Bryant Electric Company and The Perkins Electric Switch Manufacturing Company of Bridgeport, Conn., have opened New York sales offices in the Vanderbilt Avenue Building, No. 51 East 42nd Street.

POSITIONS OR MEN WANTED

The rate for "Positions or Men Wanted" advertisements of forty words or less is one dollar an insertion; additional words, one cent each; payable in advance. Remittances and copy should reach this office not later than the 15th of each month for the next succeeding issue.

Replies may be sent in care of Electrical Merchandise 17 Madison Avenue, New York City.

YOU DON'T HIRE A MAN FOR BREEDING PURPOSES. You don't care about his great-grandfather or his great-grandmother but you want to know what he **HAS DONE, IS DOING** and **CAN DO.** I have a **HAS DONE** and **IS DOING** record in the sales promotional work of electrically heated devices. **I KNOW—WRITE ME** (I will appreciate details). Address **H. N., ELECTRICAL MERCHANDISE, 17 Madison Ave., New York, N. Y.**

P. S. Referring to the above head—I **WILL** say that I am **WHITE.**

Diversity Factor is Important in Rate Making**Centralized Production and Diversity Factor**

are the economic reasons for the existence of the central station.

Improving the Diversity Factor means improving the Load Factor

BUT

To Improve Diversity Factor

on your system it is necessary to know the time of day and year of the maximum demands of the various elements of the system and the ratio of these demands to the combined demand.

A record of this sort can be obtained cheaply and correctly in plain figures, showing the exact time of each and every demand, and also the amount.

Our booklet on Printometers describes this method of obtaining records and a copy will be gladly sent on request.

MINERALLAC ELECTRIC COMPANY

CHICAGO, U. S. A.

PRINTOMETERS are made for us by
CHICAGO ELECTRIC METER COMPANY
Specialists in Maximum Demand Devices

WHY NOT GET the MERCHANTS

of your city interested in ornamental street lighting?

Start Something

either with the Merchants' Association, Board of Trade or Boosters' Club or as a straight better-lighting - better - business campaign.

We can send you data that will start it, push it, and get it. Write for new catalogue.

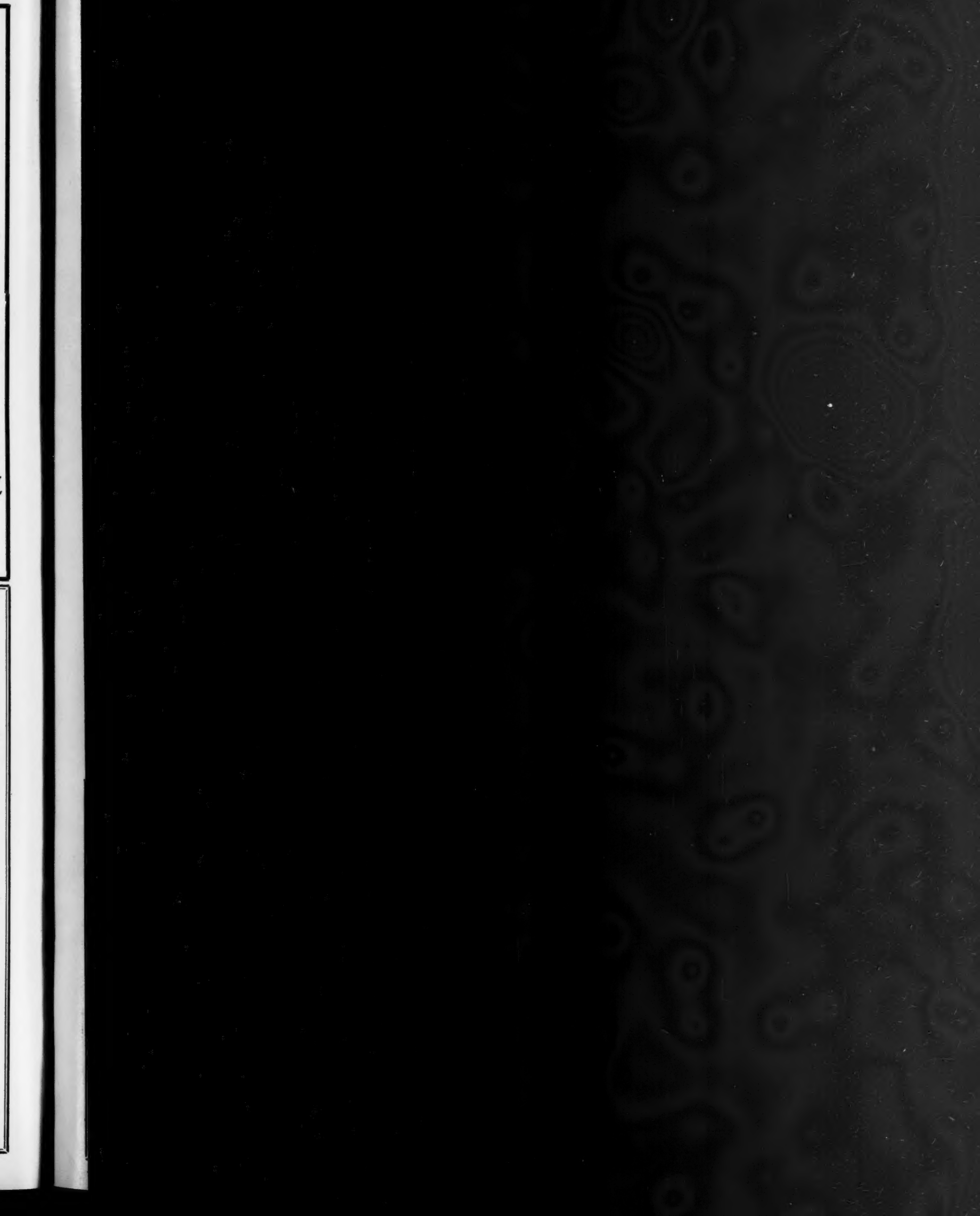


Lockport, N. Y.
Bracket on existing trolley poles without removal of overhead wires.



New Haven, Conn.
An installation drawing Street Lighting Committees from all over the country.

ORNAMENTAL LIGHTING POLE
POLES FOR ALL TYPES OF LIGHTING
• 118 Liberty Street, New York City •





"American Beauty"
Electric Iron
 The Best
 By Ironing Board
 Test

GUARANTEED FOR
 ALL TIME

American Electrical Heater Company

1535 WOODWARD AVE.
 DETROIT MICHIGAN, U. S. A.
 OLDEST AND LARGEST MAKERS



Electric Service

*An Attractive Message from YOU
 to Your Customers and Prospects*

It entertains because it's clever.

It *teaches* because it's written by men and women with fresh ideas, who know what to say and what *not* to say.

Electric Service will do for you just the two things you want most to do in your territory---

Upbuild public understanding and appreciation of Your Service.

Influence the greater use of current in your field and sell more appliances for home, office, store and factory.

Electric Service is a 16-page monthly bulletin that looks personal, your own in every way. A high-class cover, *different* every month---in colors.

Cheap to buy, and easy to distribute. You can send it out with your monthly bills, etc., without extra postage.

Electric Service is the best fertilizer to buy for that Fall planting you're already beginning.

Begin with the September issue, now printing.

Sample on request.

The Rae Company

PUBLISHERS

17 Madison Ave.,

New York City

At Home
 At the Office
 In Any Place

of Business

**BENJAMIN
 PLUG CLUSTER**

is a great convenience because it gives you two outlets where you have had but one, doubling the capacity of your sockets by doing the work of two. You may attach any other electrical appliance that you wish and burn your lamp at the same time. It requires no extra wiring---you simply screw it into the socket.

For sale by all Electrical
 Dealers
 BENJAMIN ELECTRIC
 MFG. COMPANY
 120-128 So. Sangamon St.
 Chicago



Packard

TRANSFORMERS

Have been leaders since pioneer days

and

PACKARD INSULATION

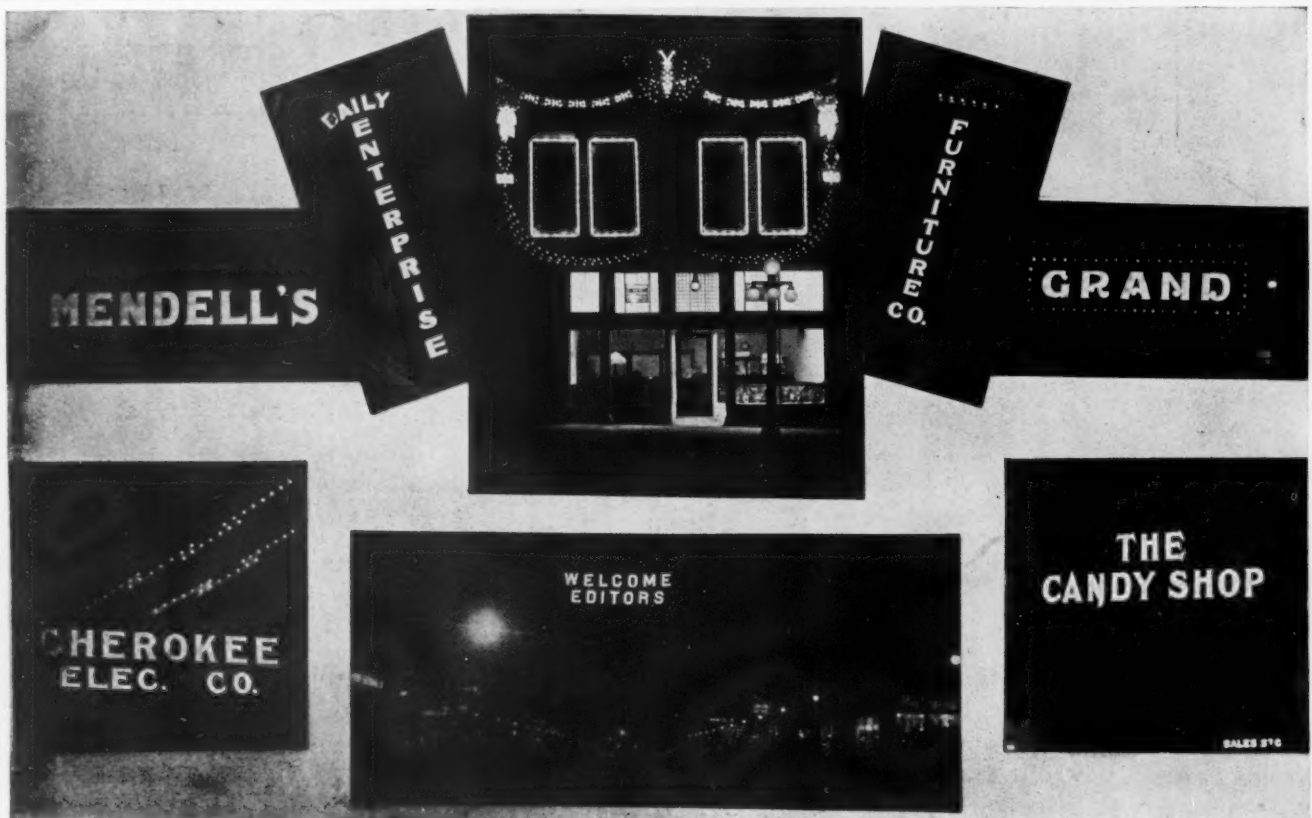
Including Insulating Cloth, Tapes and Varnishes

Explains Why They Lead.

Several new bulletins. Get on our mailing list.

THE PACKARD ELECTRIC CO.,
 342 Dana Avenue, Warren, Ohio





Take Bartlesville, Okla., for Example—

In Bartlesville, a hustling little southwestern city of 8672 people, we sold 17 signs in 10 days.

We didn't do it alone—the local New Business Manager, Mr. C. W. Johnston, was the prime mover of the campaign.

But the vital factors, aside from Mr. Johnston's energy, were the originality of Valentine's sketches, the fair prices of Valentine's quotations, the quality of Valentine's product, the promptness of Valentine's service and the 100% efficiency of Valentine's cooperation.

Don't think your town is too small—don't say that your town is too dead—to accomplish as much as Bartlesville.

Success in a sign campaign depends upon two things—yourself and your sign maker. We are ready to do our share.

Valentine Electric Sign Company,
Atlantic City, New Jersey